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Martha Pellans

THE
ENGLISH FLORA.

VOL. III.

CONTINUATION OF
SMITH'S ENGLISH FLORA.



DR. HOOKER is preparing for the Press the remaining Orders of *Cryptogamia*, to complete this work; which will be published in the course of a few months.

July, 1829.

THE ENGLISH FLORA,

BY

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STOCKHOLM, UPSAL, TURIN, LISBON, PHILADELPHIA, NEW YORK, ETC. ETC.;

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HONORARY MEMBER OF THE HORTICULTURAL SOCIETY OF LONDON;

AND

PRESIDENT OF THE LINNÆAN SOCIETY.

Mentharum valdè ferax est Anglia nostra, nam præter species de novo hîc additas, quatuor aliæ peculiaribus nominibus recensentur à Merreto in Pin. et plures præter has tum à D. Buddle tum à D. Rand observatæ sunt. Sed cum de iis nobis nondum satis constet, ulteriori eas observationi relinquere necesse habuimus.

Dill. apud Raii Syn. ed. 3. 232.

IN FOUR VOLUMES.

VOL. III.

SECOND EDITION.

LONDON:

PRINTED FOR

LONGMAN, REES, ORME, BROWN, AND GREEN,

PATERNOSTER-ROW.

1829.

RICHARD TAYLOR,
PRINTER TO THE UNIVERSITY OF LONDON,
RED LION COURT, FLEET STREET.



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IN ADDITION TO THOSE IN VOL. I. AND II.

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- Diosc. Ic.*—Dioscoridis, *Icones*.—Engravings of Plants, after the drawings of a celebrated antient manuscript in the Imperial Library at Vienna, executed under the inspection of Professor von Jacquin, who sent a set of the impressions to Linnæus, and gave or lent another to the late Dr. J. Sibthorp. The copper plates having been subsequently destroyed by a fire, no other copies exist.
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- Herb. Cliff.*—Clifford, George, *his Herbarium, answering to the Hortus Cliffortianus. Now a part of the Banksian Collection.*
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ENGLISH FLORA.

Class XIII. POLYANDRIA. *Stam.*
numerous, from the receptacle.

Order I. MONOGYNIA. *Pistil* 1.

* *Petals* 4.

265. PAPAVER. *Calyx* of 2 leaves. *Caps.* of 1 cell, opening by pores under the *stigma*.
263. CHELIDONIUM. *Cal.* of 2 leaves. *Pod* of 1 cell. *Seeds* crested.
264. GLAUCIUM. *Cal.* of 2 leaves. *Pod* of 2 or 3 cells. *Seeds* dotted.
262. ACTÆA. *Cal.* of 4 leaves. *Berry* of 1 cell. *Seeds* depressed, in 2 vertical rows.

Cistus 1, occasionally.

** *Petals* 5.

269. CISTUS. *Caps.* of several valves. *Seeds* numerous. *Cal.* of 5 permanent leaves, 2 of them smaller.
268. TILIA. *Caps.* of several close cells. *Seeds* few. *Cal.* in 5 deep, valvular, equal segments, deciduous.

Delphinium 1.

*** *Petals numerous.*

266. NYMPHÆA. *Berry* coated, of many cells. *Cal.* larger than the petals. *Pet.* seated on the germen. *Nect.* in the centre of the stigma.
267. NUPHAR. *Berry* coated, of many cells. *Pet.* from the receptacle, furrowed and honey-bearing at the back.

Order II. PENTAGYNIA. Pistils 2—6.

270. PÆONIA. *Cal.* of 5 leaves. *Pet.* 5. *Styles* none. *Follicles* with many seeds.
271. DELPHINIUM. *Cal.* 0. *Pet.* 5, or more, the upper one spurred. *Nect.* divided, tubular, sessile, in the spur.
272. ACONITUM. *Cal.* 0. *Pet.* 5, the upper one hooded. *Nect.* 2, recurved, stalked, under the hood.
273. AQUILEGIA. *Cal.* 0. *Pet.* 5, equal. *Nect.* 5, spurred below.
274. STRATIOTES. *Cal.* superior, 3-cleft. *Pet.* 3. *Berry* coated, of 6, or more, cells.
- Reseda* 1. *Helleborus* 1, 2.

Order III. POLYGYNIA. Pistils numerous.

277. THALICTRUM. *Cal.* 0. *Pet.* 4 or 5, imbricated. *Seeds* without any appendage.
276. CLEMATIS. *Cal.* 0. *Pet.* 4—8, valvular, or folded in at the edges. *Seeds* tailed. *Recept.* capitate.
275. ANEMONE. *Cal.* 0. *Pet.* 5—15, imbricated. *Seeds* numerous.
281. HELLEBORUS. *Cal.* 0. *Pet.* 5, permanent. *Nect.* tubular, 2-lipped. *Follicles* 3 or 4.
282. CALTHA. *Cal.* 0. *Pet.* 5, or more. *Nect.* 0. *Follic.* 5—10.
280. TROLLIUS. *Cal.* 0. *Pet.* 5—15, deciduous. *Nect.* flattened. *Follic.* numerous.
279. RANUNCULUS. *Cal.* of 5 leaves. *Pet.* 5, or more, with *nectaries* in their claws. *Seeds* numerous, naked.
278. ADONIS. *Cal.* of 5 leaves. *Pet.* 5—15. *Nect.* 0. *Seeds* numerous, naked.

POLYANDRIA MONOGYNIA.

262. ACTÆA. Bane-berries.

Linn. Gen. 261. *Juss.* 235. *Fl. Br.* 562. *Lam. t.* 448. *Gærtn. t.* 114. *Christophoriana. Tourn. t.* 154.

Nat. Ord. Multisiliquæ. Linn. 26. *Ranunculaceæ spuria.*
Juss. 61. *DeCand. Syst. v. 1. ord. 1.*

Cal. inferior, of 4 roundish-oblong, concave, obtuse, deciduous leaves. *Pet.* 4, alternate with the calyx, oblong or obovate, with claws, deciduous. *Filam.* numerous, about 30, cylindrical, swelling upwards. *Anth.* of two lobes, sessile on the inner side of the summit of each filament. *Germ.* superior, ovate. *Style* none. *Stigma* round, thick, obliquely depressed. *Berry* nearly globular, with a lateral furrow, smooth, of one cell, not bursting. *Seeds* numerous, semiorbicular, depressed, ranged vertically over each other in two rows.

Perennial *herbs*, natives of cold countries, with compound or lobed, cut *leaves*, and clustered white *flowers*. *Berries* black, red, or white. Qualities fetid, nauseous, and dangerous. The many *styles*, and capsular *fruit*, of *Cimicifuga* may surely keep that genus distinct; but DeCandolle thinks otherwise.

1. *A. spicata.* Black Bane-berries. Herb Christopher.
Cluster dense, ovate. Petals the length of the stamens.

A. spicata. Linn. Sp. Pl. 722. *Willd. v. 2.* 1139. *Fl. Br.* 562. *Engl. Bot. v. 13. t.* 918. *Hook. Scot.* 167. *DeCand. Syst. v. 1.* 384. *Fl. Dan. t.* 498, not 589, as in *Willdenow* and *DeCandolle.* *Bull. Fr. t.* 83. *Wahlenb. Lapp.* 150, α not β .

A. n. 1076. *Hall. Hist. v. 2.* 24.

Christophoriana. Raii Syn. 262. *Ger. Em.* 979. *f. Clus. Hist. v. 2.* 86. *f. Tillands Ic.* 148. *f.*

Napellus racemosus. Dalech. Hist. 1747. *f.*

Aconitum racemosum, Actæa quibusdam. Bauh. Hist. v. 3. p. 2. 660. *f.*

In bushy mountainous lime-stone situations, rare.

In the north-west corner of Yorkshire, as about Malham Cove, Clapham, Askrigg, and the base of Ingleborough hill; found by several botanists in Ray's time, and by others in our days. The Rev. Mr. Wood of Leeds noticed it about Thorpe Arch. In a wood at Whitly Hall, near Huddersfield, Yorkshire. *Mr. Roberts Leyland.*

Perennial. *May, June.*

4 POLYANDRIA—MONOGYNIA. Chelidonium.

Root creeping, somewhat fleshy. *Stem* triangular, 12 or 18 inches high, leafy, but little branched. Whole *plant* nearly or quite smooth. *Leaves* twice or thrice ternate; *leaflets* ovate, of a deep shining green, an inch or two long, sharply serrated, cut, partly lobed. *Flowers* several, white with a slight blush-colour, in a rather close ovate *cluster*, resembling a spike; each with a small solitary *bractea*, under its downy partial stalk. *Berries* purplish-black, juicy, the size of currants, not eatable.

Toads are reported to enjoy the fetid odour of this plant.

263. CHELIDONIUM. Celandine.

Linn. Gen. 262. *Juss.* 236. *Fl. Br.* 562. *Tourn. t.* 116. *Lam. t.* 450. *Gærtn. t.* 115.

Nat. Ord. Rhœadææ. *Linn.* 27. *Papaveraceæ.* *Juss.* 62.

DeCand. Syst. v. 2. ord. 9. N. 264, 265 the same.

Cal. inferior, of 2 roundish-ovate, concave, acute, deciduous leaves. *Pet.* 4, equal, roundish, flat, spreading, narrowest at the base. *Filam.* numerous, about 30, dilated upwards, shorter than the corolla. *Anth.* vertical, erect, compressed, obtuse, of 2 lobes. *Germ.* superior, cylindrical, the length of the stamens. *Style* none. *Stigma* small, obtuse, cloven. *Pod* linear, somewhat cylindrical, of 1 cell, and 2 undulated, deciduous valves. *Seeds* numerous, nearly oval, dotted, polished, with a pale, compressed, notched *crest* along the upper edge; disposed in 2 rows, on short stalks, along a linear, permanent, marginal *receptacle*, at each side, between the edges of the valves.

Herbaceous, brittle, with orange-coloured juice. *Root* perennial. *Leaves* pinnate, or pinnatifid. *Fl.* umbellate, yellow.

1. *Ch. majus.* Common Celandine.

Ch. majus. *Linn. Sp. Pl.* 723. *Willd. v. 2.* 1141. *Fl. Br.* 563. *Engl. Bot. v. 22. t.* 1581. *Woodv. Suppl. t.* 263. *Hook. Scot.* 167. *DeCand. Syst. v. 2. 98. Fl. Dan. t.* 542. *Bull. Fr. t.* 61. *Ger. Em.* 1069. *f. Fuchs. Hist.* 865. *f. Trag. Hist.* 107. *f. Matth. Valgr. v. 1.* 576. *f. Camer. Epit.* 402. *f.*

Ch. n. 1059. *Hall. Hist. v. 2.* 13.

Ch. majus vulgare. *Bauh. Pin.* 144. *Mill. Ic.* 61. *t. 92. f. 1.*

Chelidonia. *Brunf. Herb. v. 1.* 236. *f. Bauh. Hist. v. 3. p. 2.* 482. *f.*

Papaver corniculatum luteum, Chelidonia dictum. *Raii Syn.* 309.

β. Fl. Br. 563.

Ch. majus, foliis quernis. *Bauh. Pin.* 144. *Dill. in Raii Syn.* 309. *Mill. Ic.* 61. *t. 92. f. 2. Fl. Dan. t.* 676.

Ch. majus, folio magis dissecto. *Ger. Em.* 1069. *f.*

Ch. folio laciniato. *Bauh. Hist. v. 3. p. 2. 483. f.*

Ch. laciniatum. *DeCand. Syst. v. 2. 99.*

In waste ground and thickets, especially on a chalky soil.

β. Found plentifully at Wimbledon, Surrey, by Mr. Martyn. *Dillenius.*

Perennial. *May, June.*

Root spindle-shaped. *Stem* 2 feet high, branched, swelled at the joints, leafy, round, smooth. *Leaves* smooth, very deeply pinatifid, as Prof. DeCandolle justly observes, rather than pinnate; their lobes 2 or 3 pair, with a larger terminal one, all rounded, bluntly lobed and notched; the lateral ones sometimes dilated at their lower margin, near the base, almost as if auricled; their colour a deep shining green. *Fl.* bright yellow, in umbels on long, often hairy, stalks. *Calyx* tawny, often hairy. *Seeds* black and shining, each with a whitish deciduous crest.

Every part is brittle, and, when broken, discharges an orange-coloured, fetid juice, with which, as Dioscorides reports, Swallows were supposed to restore the sight of their young if blinded; whence the name, formed from the greek appellation of a Swallow. Dioscorides favours another meaning, which is that the plant appears and disappears with those birds. Its orange juice probably caused it to be given in the jaundice.

Our variety β, characterized by the jagged foliage and petals, first mentioned as an English plant, though merely as a variety, by Dillenius, not Ray, has recently been made a species by M. DeCandolle and some other botanists. Appearances are against it, though Miller found no alteration in plants raised from seed.

264. GLAUCIUM. Horned-poppy.

Tournef. t. 130. Juss. 236. Fl. Br. 563. Prodr. Fl. Græc. v. 1. 357. Gært. t. 115. DeCand. Syst. v. 2. 94.

Under Chelidonium, in Linn. Gen. 262.

Nat. Ord. see *n.* 263.

Cal. inferior, of 2 oblong, concave, acute, deciduous leaves.

Pet. 4, much larger than the calyx, roundish-obovate, undulated, crumpled, spreading, with short claws, deciduous; 2 opposite ones rather the smallest. *Filam.* numerous, capillary, short. *Anth.* roundish, terminal, of 2 lobes. *Germ.* superior, cylindrical, or somewhat compressed, longer than the stamens. *Style* none. *Stigma* large, abrupt, permanent, of 2 or 3 cloven, compressed, downy lobes. *Pod* linear, very long, of 2 or 3 linear, concave valves, and as many cells. *Seeds* numerous, convex at the outer side, pitted in regular lines, without a crest, disposed irregularly in 2 rows in each cell, being sunk in the hollows of a spongy or membranous *partition*, connected with the linear marginal *receptacles*,

6 POLYANDRIA—MONOGYNIA. Glaucium.

which are placed between the edges of the valves, and bear the seeds on short stalks.

Jussieu doubted whether the spongy cellular body, in which the seeds are sunk, were really a partition; but the membranous, likewise cellular, indubitable partitions of *G. violaceum*, prove the true nature of that body, and he was too judicious to separate this last-mentioned species generically from the rest. Prof. Hooker having examined only one species, *G. luteum*, was led by Jussieu into a mistake, and found fault with Gærtner's figure of *G. phœniceum*, which is peculiarly excellent and correct.

Annual or biennial herbs, mostly glaucous, with yellow fetid juice. *Leaves* more or less pinnatifid and subdivided; the upper ones sessile. *Flowers* solitary, stalked, lateral or terminal, yellow, scarlet, or violet, very handsome.

1. *G. luteum*. Yellow Horned-poppy.

Stem smooth. Stem-leaves wavy. Pod roughish with minute tubercles.

G. luteum. Scop. Carn. v. 1. 369. Gærtner. v. 2. 166. Fl. Br. 563. Hook. Lond. t. 56. Scot. 167. Willd. Enum. 562.

G. flavum. DeCand. Syst. v. 2. 94.

G. n. 1060. Hall. Hist. v. 2. 14.

Chelidonium glaucium. Linn. Sp. Pl. 724. Willd. v. 2. 1142. Engl. Bot. v. 1. t. 8. Fl. Dan. t. 585.

Papaver corniculatum. Fuchs. Hist. 520. f. Camer. Epit. 805. f. Lob. Ic. 270. f.

P. corniculatum luteum. Bauh. Hist. v. 3. p. 2. 398. f. Raii Syn. 309.

P. cornutum. Cord. Hist. 131. f. Matth. Valgr. v. 2. 407. f.

P. cornutum, flore luteo. Ger. Em. 367. f.

On the sandy sea coast.

Biennial. July, August.

Root spindle-shaped. Plant very glaucous. Stems spreading, 2 or 3 feet long, round, branched, leafy, smooth. Radical leaves numerous, stalked, a span long, pinnatifid, lyrate, lobed, cut, hairy, lasting through the winter; stem-leaves sessile, less rough, short, broad, lobed, and cut, clasping the stem with their heart-shaped base. Flower-stalks lateral and terminal, smooth, scarcely so long as the calyx, which is rough with short hairs, falling off as the flower opens. Petals $1\frac{1}{2}$ inch long, of a golden yellow, certainly answering rather to the latin word *flavus* than to *luteus*, but the latter appellation has been most generally adopted. Pod nearly a foot long, curved, roughish with minute tubercles, never hairy, rarely quite smooth. The spongy substance of the partition is united with the lateral receptacles, by which indeed it is formed, and this union is permanent. The surface of the seeds, in every species, is curiously cellular.

2. *G. phœniceum*. Scarlet Horned-poppy.

Stem hairy. Stem-leaves pinnatifid, cut. Pod rough with upright bristles.

G. phœniceum. *Gærtn. v. 2. 165. t. 115. Fl. Br. 564. Engl. Bot. v. 20. t. 1433. Fl. Græc. t. 489. Willd. Enum. 562.*

G. corniculatum. *Curt. Lond. fasc. 6. t. 32. DeCand. Syst. v. 2. 96.*

G. hirsutum, flore phœniceo. *Tourn. Inst. 254.*

Chelidonium corniculatum. *Linn. Sp. Pl. 724. Willd. v. 2. 1143.*

Papaver corniculatum phœniceum, folio hirsuto. *Bauh. Hist. v. 3. p. 2. 399. f.*

P. corniculatum, flore phœniceo. *Lob. Adv. 109. Obs. 141. f.*

P. cornutum, phœniceo flore. *Clus. Hist. v. 2. 91. f. Lob. Ic. 271. f.*

P. cornutum, flore rubro. *Ger. Em. 367. f.*

In sandy fields, or on the sea coast, a very rare, or perhaps doubtful, native.

In Portland island. *Lobel.* Sent from Norfolk by Mr. Stillingfleet. *Hudson.* No person has found it since.

Annual. *June, July.*

Root tapering. *Herb* rather less glaucous, and more upright, than the preceding. *Stem* clothed with spreading hairs. *Leaves* all oblong, hairy, deeply and unequally pinnatifid and cut; the upper ones clasping the stem. *Flower-stalks* hairy, shorter than the *calyx*, which is very hairy. *Petals* smaller and narrower than in *G. luteum*, of a rich scarlet, with an oblong black spot at the base. *Pod* clothed with numerous, rigid, silky, close-pressed, or upright, bristles. Its structure is perfectly well represented by *Gærtner*, with the spongy *partition*, closely united with the marginal *receptacles*.

Corniculatum, as a specific name, is applicable to the whole genus, serving originally to distinguish it from *Papaver*.

3. *G. violaceum*. Violet Horned-poppy.

Leaves doubly pinnatifid, linear, smooth. Stem smooth.

Pod of three valves and three cells, with membranous partitions.

G. violaceum. *Juss. Gen. 236. Fl. Br. 565. Fl. Græc. t. 490. Relh. 204. Willd. Enum. 562.*

G. flore violaceo. *Tourn. Inst. 254.*

Chelidonium hybridum. *Linn. Sp. Pl. 724. Willd. v. 2. 1143. Engl. Bot. v. 3. t. 201.*

Papaver corniculatum violaceum. *Bauh. Hist. v. 3. p. 2. 399. f. Lob. Ic. 272. f. Dod. Pempt. 449. f. Raii Syn. 309.*

P. cornutum, flore violaceo. *Ger. Em. 367. f. Moris. v. 2. 274. sect. 3. t. 14. f. 3.*

Rœmeria hybrida. *DeCand. Syst. v. 2. 92.*

In corn-fields rare.

8 POLYANDRIA—MONOGYNIA. Papaver.

Between Swaffham and Burwell, Cambridgeshire. *Ray*. In other parts of that county. *Rev. Mr. Hemsted*. About 4 miles from Aylsham towards Cromer, Norfolk. *Mr. Hugh Rose*.

Annual. *May, June*.

Root slender. *Stem* erect, branched, leafy, a foot high, round, even, and generally quite smooth; rarely somewhat hairy. *Leaves* dark green, nearly smooth, twice or thrice pinnatifid, with linear, opposite or alternate, bluntish, bristle-pointed segments; the lower ones stalked; upper sessile. *Fl.* on long, lateral, axillary, or terminal simple stalks, of a brilliant violet blue, very splendid, but extremely fugacious, somewhat larger than the last. *Pod* 2 or 3 inches long, cylindrical, more or less clothed with scattered, ascending, bristly prickles, separating when ripe into 3 flattish valves, sometimes 4, as in *Morison's* figure, with as many intermediate linear *receptacles* of the *seeds*, each united internally with a membranous, undulated or corrugated, pitted *partition*. These partitions meet in the centre, dividing the pod into complete cells, though there is no central column. *Seeds* like the other species, but smaller, attached by small stalks to the receptacles, and nestling, in a double row, in the hollows of the partitions.

Medicus, a writer best known as the "*iniquissimus censor*" of *Linnæus* and his disciples, has in *Usteri's Annalen der Botanick*, v. 3. 9—19, (in the 21st page of which he is stigmatized with the above designation,) divided the Linnæan *Chelidonium*, establishing *Glaucium* of *Tournefort*, and proposing another genus, founded on *G. violaceum*, by the name of *Ræmeria*, after a late German botanist. This genus is admitted by the able *Prof. DeCandolle*, whence it becomes an object of attention; for *Medicus* and his writings have in general not been found worthy of much regard. My learned friend chiefly depends on the following characters to distinguish *Ræmeria*, "a capsule of 3 or 4 valves, and a single cell, the receptacles, though cellular, or pitted, not being combined together." But he describes one species with only two valves, which abrogates the former character; and the cellular extension of the receptacles, though not spongy, is otherwise exactly analogous to the partitions of the bivalve species, constituting, in fact, real and complete partitions, meeting, though not combined, in the centre of the fruit; and they identify the partitions of the bivalve species, which *Jussieu* was led, by the analogy of this natural order, to doubt. *Linnæus* has remarked that there are few genera in which some part or other of the fructification does not occasionally form an exception to the generic character; and this is no less true of natural orders.

265. PAPAVER. Poppy.

Linn. Gen. 263. *Juss.* 236. *Fl. Br.* 565. *Tourn. t.* 119, 120. *Lam. t.* 451. *Gærtn. t.* 60.

Nat. Ord. see n. 263.

Cal. inferior, of 2 ovate, concave, obtuse, equal, deciduous leaves. *Pet.* 4, roundish, crumpled, spreading, large; narrowest at the base; 2 opposite ones smallest. *Filam.* very numerous, capillary, much shorter than the corolla. *Anth.* terminal, erect, somewhat stalked, oblong, obtuse, compressed. *Germ.* roundish or oblong, large. *Style* none. *Stigma* peltate, radiated, downy, permanent. *Caps.* ovate, or obovate-oblong, coriaceous, large, of one cell, incompletely separated into a greater or less number of marginal cells, answering to the number of rays in the stigma, between which the capsule bursts by as many valvular openings, under the *stigma*, which is more or less elevated by the incomplete *partitions*. *Seeds* kidney-shaped, numerous, minute, dotted, attached to the partitions.

Annual or perennial *herbs*, with a fetid, milky, narcotic, juice. *Stems* round. *Leaves* pinnatifid and cut. *Stalks* lateral or terminal, long, single-flowered. *Fl.* large, various in colour, mostly scarlet or yellow, rarely white or purplish; drooping in the bud, fugacious. *Capsule* bristly or smooth.

* *Capsules bristly.*

1. *P. hybridum.* Round-rough-headed Poppy.

Capsule nearly globular, furrowed, bristly. Calyx hairy. Stem leafy, many-flowered. Leaves doubly pinnatifid.

P. hybridum. *Linn. Sp. Pl.* 725. *Willd. v. 2.* 1144. *Fl. Br.* 565. *Engl. Bot. v. 1. t.* 43. *DeCand. Syst. v. 2.* 73.

P. laciniato folio, capitulo hispido rotundiore. *Raii Syn.* 308.

Argemone capitulo torulo. *Ger. Em.* 373. *f.*

A. capitulo brevioris hispido. *Bauh. Hist. v. 3. p.* 2. 396. *f.*

A. capitulo torulis canulato. *Lob. Ic.* 276. *f.*

A. minor, capitulis brevioribus. *Dalech. Hist.* 440. *f.*

In sandy or chalky fields, but rare.

At Wells, Norfolk. *Mr. Crowe.* Nearly half a mile out of St. Benedict's gates, Norwich. *Mr. Pitchford.* About Durham. *Mr. Robson.* At Darent, near Dartford. *Mr. Lewin.* [About Ramsgate. *Mr. G. E. Smith.*]

Annual. *July.*

Root small and tapering. *Herb* 12 or 18 inches high, rough with minute bristles. *Leaves* deep green, with numerous, decurrent, narrow, linear-lanceolate, obscurely revolute segments, each tipped with a bristle. *Fl.* rather small, deep scarlet or crimson, short-lived; often violet at the base. *Pollen* bright blue. *Stig-*

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ma with from 5 to 8 rays, a little raised above the capsule, even in its early state. *Caps.* the size of a filberd, furrowed lengthwise, thickly beset with rigid, ascending, tawny bristles.

A permanent species, no more hybrid than any other of its genus.

2. *P. Argemone*. Long-rough-headed Poppy.

Capsule club-shaped, ribbed, bristly. Calyx slightly hairy. Stem leafy, many-flowered. Leaves doubly pinnatifid.

P. Argemone. *Linn. Sp. Pl.* 725. *Willd. v. 2.* 1144. *Fl. Br.* 566. *Engl. Bot. v. 9. t.* 643. *Curt. Lond. fasc. 5. t.* 38. *Hook. Scot.* 168. *DeCand. Syst. v. 2.* 74. *Fl. Dan. t.* 867.

P. n. 1061. *Hall. Nomencl.* 95. *Hist. v. 2.* 15; *n.* 1063, by mistake.

P. laciniato folio, capitulo hispido longiore. *Raii Syn.* 308.

Argemone capitulo longiore. *Bauh. Pin.* 172. *Lob. Ic.* 276. *f. Ger. Em.* 373. *f. Dalech. Hist.* 440. *f.*

β. Papaver maritimum. *With.* 486.

In corn-fields and their borders, on gravelly or sandy ground.

β. In sandy ground near the sea. *With.*

Near Beverley, Yorkshire. *Mr. R. Teesdale.*

Annual. *June, July.*

Herbage resembling the preceding, but the bristles on the *stem* are less closely pressed, and the segments of the *leaves* somewhat broader. *Pet.* pale scarlet, black at the base, soon falling; often jagged. *Stamens* dilated upwards. Rays of the *stigma* generally 5, rarely 6, sometimes but 4. *Caps.* narrow, bristly, swelling upwards, with angles, or ribs, in number answering to the rays, the intermediate spaces even, not furrowed; bristles most numerous towards the top. The flowers are sometimes double.

β is a trivial variety, bearing one flower only, as often happens with starved maritime plants.

** *Capsules smooth.*

3. *P. dubium*. Long-smooth-headed Poppy.

Capsule smooth, oblong, angular. Stem many-flowered, hairy. Bristles on the flower-stalks close-pressed. Leaves doubly pinnatifid.

P. dubium. *Linn. Sp. Pl.* 726. *Willd. v. 2.* 1146. *Fl. Br.* 567. *Engl. Bot. v. 9. t.* 644. *Curt. Lond. fasc. 5. t.* 37. *Hook. Scot.* 168. *DeCand. Syst. v. 2.* 75. *Fl. Dan. t.* 902.

P. Rhœas. *Dickenson in Shaw's Staffordshire, v. 1.* 110, from the author.

P. n. 1063. *Hall. Nomencl.* 95. *Hist. v. 2.* 15; *n.* 1065.

P. laciniato folio, capitulo longiore glabro. *Raii Syn.* 309.

Argemone capitulo longiore glabro. *Moris. v. 2.* 279. *sect. 3. t. 14. f.* 11.

In cultivated fields, especially on a light soil.

Annual. *June, July.*

Of a stouter more luxuriant habit than the foregoing, with broader leaves. Stem clothed with spreading hairs; flower-stalks with close-pressed bristles. Petals broader than they are long, of a light scarlet, the margin mostly crenate. Stam. linear. Pollen yellow. Stigma of from 6 to 8 rays. Caps. oblong, swelling upwards, abrupt, with as many ribbed angles as there are rays, perfectly smooth, and somewhat glaucous.

Jacquín, in *Fl. Austr. t. 25*, has published a white-flowered variety, bearing a dark purple spot on the base of each petal. This has not been observed in Britain; nor have I seen any variation in the hue of the flowers, which are always known from our other red Poppies by their paleness.

4. *P. Rhœas*. Common Red Poppy. Corn Rose.

Capsule smooth, nearly globular. Stigma many-rayed. Stem many-flowered, rough, like the flower-stalks, with spreading bristles. Leaves pinnatifid, cut.

P. Rhœas. Linn. *Sp. Pl.* 726. Willd. *v. 2.* 1146. *Fl. Br.* 567. *Engl. Bot. v. 9. t. 645.* Curt. *Lond. fasc. 3. t. 32.* Woodv. *t. 186.* Hook. *Scot.* 168. Lob. *Ic. 275. f.* Ger. *Em.* 371. *f.* DeCand. *Syst. v. 2. 76.* *Fl. Dan. t. 1580.*

P. n. 1064. Hall. *Nomencl.* 95. *Hist. v. 2. 16.*

P. laciniato folio, capitulo brevior glabro, annuum, Rhœas dictum. Raii *Syn.* 308.

P. erraticum. Matth. *Valgr. v. 2. 404. f.* Camer. *Epit.* 802. *f.*

P. erraticum primum. Fuchs. *Hist.* 515. *f.*

Argemone. Trag. *Hist.* 120. *f.*

In corn-fields, a troublesome weed.

Annual. *June, July.*

In habit like the last, but the segments of the leaves are broader, and less numerous. Stem, as well as flower-stalks, clothed all over with tawny hairs spreading horizontally. Calyx rough with similar, but more upright hairs. Pet. large, undulated, of a deep rich scarlet, sometimes black at the base. Stigma of 10 or 12 rays. Caps. ovate, abrupt, short, quite smooth and even.

Beautiful varieties of this species, with semidouble flowers, variegated with rose-colour and white, are easily cultivated for ornament, but liable to degenerate in luxuriance. Its medical qualities are mildly narcotic.

5. *P. somniferum*. White Poppy.

Capsule nearly globular, smooth as well as the calyx and stem. Leaves notched, clasping the stem, glaucous.

P. somniferum. Linn. *Sp. Pl.* 726. Willd. *v. 2.* 1147. *Fl. Br.* 568. *Engl. Bot. v. 30. t. 2145.* Woodv. *t. 185.* Hook. *Scot.* 168. DeCand. *v. 2. 81.* Bull. *Fr. t. 57.*

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P. n. 1065. *Hall. Hist.* v. 2. 16.

P. sylvestre. *Raii Syn.* 308. *Ger. Em.* 370. *f.*

P. sativum. *Matth. Valgr.* v. 2. 405. *f.* *Camer. Epit.* 803. *f.* *Dal-
lech. Hist.* 1708. *f.* *Bauh. Hist.* v. 3. p. 2. 390. *f.*

On sandy ground in the fens.

On the banks of all the fen ditches, where the soil is sandy, in the parish of Hockwold cum Wilton, Norfolk, certainly wild. *Rev. Mr. White.* By the Roman road from Cambridge to Ely. *Rev. Archdeacon Pierson.* In newly trenched ground, by road sides, &c, about Delvine house, near Coupar, Angusshire. *Miss Watson.* The latter, however, can scarcely be supposed a wild station for a plant so universal in gardens, nor is it published as such on this authority, but on the former.

Annual. *July.*

The whole herb is glaucous, and generally smooth, though the *flower-stalks* now and then bear several rigid, spreading, bristly hairs. *Stem* 3 or 4 feet high, erect, branched, leafy. *Leaves* broad, wavy, lobed and bluntly notched, clasping the stem with their heart-shaped base. *Fl.* 3 inches broad, blueish white, with a broad violet spot at the base of each petal. Such are all the wild specimens I have seen. In gardens double varieties, of every shade of purple, scarlet, crimson, and even green, mixed with white, are common, though nothing can be more liable to change. *Germen*, as well as *capsule*, nearly globular, often furrowed. *Stigma* of 8, 10, or more rays, with a broad, thin, de-
flexed margin. *Seeds* oily, sweet, and eatable.

The milky juice, when dried, becomes Opium, which, as Haller well observes, is far more potent and dangerous in hot countries than in our cooler climates. The capsules boiled afford a gently narcotic infusion, and used to be kept in the shops; but the foreign Opium is more certain, and more manageable, in proper hands, such as alone ought to direct its use.

6. *P. cambricum.* Yellow Poppy.

Capsule smooth, oblong, beaked. Stem many-flowered, nearly smooth. Leaves stalked, pinnate, cut.

P. cambricum. *Linn. Sp. Pl.* 727. *Willd. v.* 2. 1147. *Fl. Br.* 568. *Engl. Bot. v.* 1. t. 66. *Hook. Scot.* 168.

P. luteum perenne, laciniato folio, cambrobritannicum. *Raii Syn.* 309.

P. cambricum perenne, flore sulphureo. *Dill. Elth. v.* 2. 300. t. 223.

P. erraticum, pyrenaicum, flore flavo. *Bauh. Pin.* 171. *Prodr.* 92. *Robert. Ic. t.* 11.

Argemone cambrobritannica lutea, capite longiore glabro, &c. *Moris. v.* 2. 279. *sect. 3. t.* 14. *f.* 12.

Meconopsis cambrica. *DeCand. Syst. v.* 2. 87.

In moist rocky shady situations, in Wales and Westmoreland.

In various parts of North Wales. *Ray.* About Kendal, West-

POLYANDRIA—MONOGYNIA. *Nymphæa*. 13

moreland, plentifully. *Hudson*. In shady lanes near Kirkby Lonsdale.

Perennial. *June*.

Herbage tender, brittle, of a light, slightly glaucous, green ; its juice lemon-coloured. *Stem* a foot high, mostly besprinkled with nearly upright hairs, leafy, branched. *Leaves* stalked, pinnate ; leaflets nearly ovate, acute, cut, lobed, or pinnatifid, smooth, somewhat decurrent ; most glaucous underneath. *Fl.* of a most elegant full lemon-colour, deliciously fragrant like *Crasula coccinea* and *odoratissima*, or *Mesembryanthemum noctiflorum* ; smaller than *P. Rhæas* ; each on a very long, minutely hairy stalk. *Cal.* hairy. *Caps.* elliptic-oblong, of 4 or 5 cells, with as many ribs, or *receptacles*, which elevate the convex, 4- or 5-rayed, *stigma*, and, before the *capsule* bursts by intermediate valves at the top, have the appearance of a short style. By this character the present species has been separated from *Papaver*, by some able botanists, but I think on insufficient grounds, whatever may be the true nature of certain American plants associated with it, which I have not sufficiently investigated. Except the elongation just described, this *capsule* has much of the structure of *Argemone mexicana*, see Gærtner, t. 60. which has but slight traces of the dilated receptacles, or imperfect partitions, of *Papaver*.

266. NYMPHÆA. White Water-lily.

Linn. Gen. 264. *Juss.* 68. *Fl. Br.* 569. *Prodr. Fl. Græc.* v. 1. 360. *DeCand. Syst.* v. 2. 49. *Gærtn. t.* 19, *alba*.

Castalia. *Salisb. in Ann. of Bot.* v. 2. 71.

Nat. Ord. Rhœadeæ. *Linn.* 27. *Hydrocharides.* *Juss.* 22. *Nymphææ.* *Salisb. Nymphæaceæ.* *DeCand.* 35. See *Grammar* 138, 199, 208.

Cal. inferior, of 4 large, coriaceous, oblong, permanent leaves, coloured on the upper side. *Pet.* numerous, oblong, placed in several rows upon the base of the germen. *Nect.* globose, in the centre of the stigma. *Filam.* very numerous, flat, placed on the germen above the petals ; the outermost gradually dilated. *Anth.* linear, of 2 parallel cells, closely attached, in their whole length, to the inner surface of the upper part of each filament. *Germ.* superior, sessile, globose. *Style* none. *Stigma* orbicular, sessile, of numerous rays, pointed and separate at the extremity, permanent. *Berry* coriaceous, scarred, of as many cells as there are rays ; at length internally gelatinous and pulpy. *Seeds* numerous in each cell, roundish.

Large, smooth, aquatic, perennial *herbs.* *Stem* none. *Leaves* floating, on long footstalks, heart-shaped or peltate, entire or toothed. *Fl.* on long simple stalks, large,

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white, red, or blue, closing, and sinking more or less below the surface of the water, at night.

1. *N. alba*. Great White Water-lily.

Leaves heart-shaped, entire; even beneath. Petals elliptic-oblong. Rays of the stigma sixteen, recurved. Root horizontal.

N. alba. Linn. *Sp. Pl.* 729. Willd. v. 2. 1152. Fl. Br. 570. Comp. ed. 4. 94. Engl. Bot. v. 3. t. 160. Hook. Lond. t. 140. Scot. 169. DeCand. *Syst.* v. 2. 56. Raii *Syn.* 368. Fl. Dan. t. 602. Ger. Em. 819. f. Matth. *Valgr.* v. 2. 245. f. Camer. *Epit.* 634. f. Brunf. *Herb.* v. 1. 37. f. Lob. *Ic.* 595. f. Ehrh. *Pl. Off.* 455.

N. n. 1067. Hall. *Hist.* v. 2. 20.

N. candida. Fuchs. *Hist.* 535. f.

In clear pools and slow rivers.

Perennial. July.

Root tuberous, horizontal, sending down numerous long, stout radicles, which are fibrous at the extremity. Leaves floating, a span wide, oval-heartshaped, with nearly parallel or close lobes at the base, entire, smooth, their radiating veins underneath not prominent, in which it differs from the American *N. odorata*. Footstalks and flower-stalks cylindrical. Flowers 4 or 5 inches wide, white, with yellow *stamens* and *pistil*, the upper surface of the calyx-leaves white, often tinged with pale red, altogether very beautiful, though destitute of scent. They expand in sunshine, and the middle of the day only, closing towards evening, when they recline on the surface of the water, or sink beneath it. The berry gradually decays at the bottom of the water, scattering its seeds in the mud. Every part of the herb is highly vascular, perspiring rapidly, and, though so succulent, drying very soon. It is perhaps the most magnificent of our native flowers. The sinking of the flowers under water at night having been doubted, or at least denied, I have been careful to verify it in this species. The same circumstance is recorded of the Egyptian *N. Lotus*, from the most remote antiquity. The stimulus of light, which indeed acts evidently on many other blossoms and leaves, expands and raises, with peculiar force, these splendid white flowers, that the pollen may reach the stigma uninjured; and when that stimulus ceases to act, they close again, drooping by their own weight, to a certain depth. The still more ponderous fruit finally sinks to the bottom.

267. NUPHAR. Yellow Water-lily.

Prodr. Fl. Græc. v. 1. 361. *Comp. ed.* 4. 94. *Dryand. in Ait. Hort. Kew. ed.* 2. v. 3. 295. *DeCand Syst.* v. 2. 59.

Under Nymphæa, in Linn. *Gen.* 264. Juss. 68. Fl. Br. 569. *Gærtn. t.* 19, *lutea*.

Nat. Ord. see *n.* 266.

Cal. inferior, of 5 or 6 large, coriaceous, concave, coloured, permanent leaves. *Pet.* numerous, oblong, much smaller than the calyx; furrowed and honey-bearing at the back; proceeding, like the stamens, from the receptacle. *Filam.* very numerous, unconnected with the germen, linear, recurved. *Anth.* linear, of 2 parallel cells, closely attached to the inner surface of the upper part of each filament. *Germ.* superior, nearly sessile, ovate, with an elongation at the summit. *Style* none. *Stigma* sessile, orbicular, convex, entire or notched, with many central radiating clefts. *Berry* coriaceous, smooth, ovate, pointed, of as many cells as there are rays, finally pulpy within. *Seeds* numerous, smooth, ovate, in several rows in each cell.

Habit like *Nymphæa*, but the flowers are smaller, and always yellow, essentially different in structure from that genus.

Our White Water-lily being clearly the original *Νυμφαία*, *Nymphæa*, of Dioscorides, I have retained the name of *Νουφαρ*, *Nuphar*, given by him, for the Yellow Water-lily, which the modern Greeks, who make a cordial of its flowers, after the example of their forefathers, have but little corrupted, and which the Turks have perverted into *Pufer*.

1. *N. lutea*. Common Yellow Water-lily.

Calyx of five leaves. Border of the stigma entire. Footstalks two-edged. Lobes of the leaves meeting each other.

N. lutea. *Prodr. Fl. Græc. v. 1.* 361. *Comp. ed.* 4, 94. *Hook. Lond. t.* 141. *Scot.* 169. *DeCand. Syst. v. 2.* 60.

Nymphæa lutea. *Linn. Sp. Pl.* 729. *Willd. v. 2.* 1151. *Fl. Br.* 569. *Engl. Bot. v. 3. t.* 159. *Raii Syn.* 368. *Fl. Dan. t.* 693. *Ger. Em.* 819. *f. Fuchs. Hist.* 536. *f. Matth. Valgr. v. 2.* 246. *f. Camer. Epit.* 635. *f. Lob. Ic.* 594. *f. Ehrh. Pl. Off.* 445.

N. n. 1066. *Hall. Hist. v. 2.* 20.

N. altera. *Brunf. Herb. v. 1.* 40. *f.* 36.

In rivers and pools frequent.

Perennial. *July.*

Whole plant rather smaller than *Nymphæa alba*. *Footstalks* two-edged, flattened on the upper surface. *Leaves* entirely smooth and even, rounded at the end, and generally at the lobes, which meet and lap over each other. *Flower-stalks* nearly or quite cylindrical. *Fl.* about 2 inches wide, cupped, all over of a golden yellow, with the scent of brandy or ratafia, whence they are

called Brandy-bottles in Norfolk. They perhaps communicate this flavour by infusion to the cooling liquors, or Sherbets, so much used in the Levant. The seed-vessel, a coated *berry*, when ripe, bursts irregularly, as Prof. Hooker well observes, not dissolving away into a mass of pulp like the *Nymphæa*.

Linnæus once considered these plants as monocotyledonous, but he afterwards corrected that ill-founded opinion, and the question is set at rest by Prof. Hooker's complete figures. Yet they indubitably belong to M. Richard's class of *Endorrhizæ*, having an internal radicle; and they afford in fact one, among many instances, of this ingenious physiologist's two great classes, *Endorrhizæ* and *Exorrhizæ*, not corresponding uniformly with the *Monocotyledones* and *Dicotyledones* of other botanists, as it is much to be wished they could have done. All these difficulties however, in able hands, must gradually lead to truth.

2. *N. pumila*. Least Yellow Water-lily.

Calyx of five leaves. Border of the stigma toothed. Footstalks two-edged. Lobes of the leaves rather distant.

N. pumila. Hoffm. *Germ. for* 1800. 241. *Wahlenb. Lapp.* 151. *DeCand. Syst. v.* 2. 61. *Hook. Lond. t.* 165.

N. minima. *Engl. Bot. v.* 32. *t.* 2292.

Nymphæa lutea β , *pumila*. "Timm in *Mag. für Nat. Mecklenb. v.* 2. 256."

N. lutea β , *minima*. *Willd. Sp. Pl. v.* 2. 1151; *from the author*.

N. Kalmiana. *Hook. Scot.* 169, *but not of other writers*.

In the highland lakes of Scotland.

In the lake at the foot of Ben Cruachan. *Mr. Borrer*. In several other Scottish lakes. *Hooker*.

Perennial. *July*.

Much smaller than the preceding. *Footstalks* less convex beneath, and more concave above. *Leaves* about 3 inches long, shining at the back; their lobes not close together. *Fl.* lemon-coloured, tinged with green, scarcely $1\frac{1}{2}$ inch wide, and essentially distinguished by the green sharply notched border of the stigma.

Timm is no authority for the above name, as he confounded this most distinct species with *lutea*; but I gladly concur with the writers who have adopted that given by Hoffmann, which, though I overlooked it, is prior to mine. Priority in nomenclature is a just claim; but neither that, nor any authority, should be allowed in favour of an unscientific, erroneous, or illiterate appellation, whether specific or generic. I have in general silently rejected such, avoiding controversy, and leaving the decision to those who may hereafter care about the matter.

268. *TILIA*. Lime-tree.

Linn. Gen. 267. *Juss.* 292. *Fl. Br.* 571. *Sm. in Rees's Cycl. v.* 35. *Tourn. t.* 381. *Lam. t.* 467. *Gærtn. t.* 113.

Nat. Ord. *Columniferæ*. Linn. 37. *Tiliaceæ*. Juss. 79.

Cal. inferior, in 5 deep, valvular, concave, coloured, rather coriaceous, equal segments, about the size of the corolla, deciduous. *Pet.* 5, obovate, obtuse, alternate with the calyx, somewhat notched at the summit; in some species bearing a small scale, or *nectary*, on the inner side at the base. *Filam.* numerous, 30 or more, thread-shaped, the length of the petals. *Anth.* of 2 nearly orbicular lobes, bursting outwards. *Germ.* superior, roundish. *Style* columnar, erect, scarcely so long as the stamens, deciduous. *Stigma* with 5 obtuse angles. *Caps.* roundish, more or less angular, bursting tardily at the base, of 5 cells, seldom all perfect; partitions opposite to the angles. *Seeds* 1 or 2 in each cell of the germen, but many prove abortive, and the ripe capsule has often but 1 cell, with a solitary *seed*, which is globular and smooth; the embryo, according to Doody and Gærtner, large, heart-shaped and lobed.

Handsome trees, with spreading, alternate, *branches*; alternate, stalked, heart-shaped, acute, serrated, deciduous *leaves*, hairy at the origin of their veins; paniced, yellowish, fragrant *flowers*, with an oblong entire *bractea* united to the common stalk. *Capsule* with or without angles, mostly downy. Qualities mucilaginous. *Bark* internally fibrous and tough.

1. *T. europæa*. Common Smooth Lime-tree. Linden-tree.

Nectaries none. Leaves twice the length of the footstalks, quite smooth, except a woolly tuft at the origin of each vein beneath. Cymes many-flowered. Capsule coriaceous, downy.

T. europæa. Linn. *Sp. Pl.* 733. *Herb. Linn. n.* 1. *Willd. v.* 2. 1161. *Fl. Br.* 571, α . *Engl. Bot. v.* 9. ed. 4. t. 610. *Comp.* 94. *Lightf.* 280. “*Svensk. Bot. t.* 40.” *Hort. Kew. ed.* 2. v. 3. 299, α .

T. intermedia. *DeCand. Prodr. v.* 1. 513.

T. foemina. *Ger. Em.* 1483. *f.*

T. foemina, folio majore. *Bauh. Pin.* 426.

T. vulgaris platyphyllos. *Raii Syn.* 473; but not of *J. Bauhin*.
Lime-tree. *Hunt. Evel. Sylv. f.*

In woods and hedges, or upon grassy declivities.

Tree. *July*.

A tall and handsome, hardy *tree*, with smooth, round, brown, leafy, spreading *branches*, green while tender. *Leaves* 3 or 4 inches broad, and rather more in length, undivided; unequal and

somewhat heart-shaped, as well as entire, at the base ; the margin acutely and rather unequally serrated ; the point elongated, acute, serrated at its base : upper surface quite smooth, of a bright pleasant green ; under paler, or slightly glaucous, likewise smooth, except small depressed tufts of brown woolly hairs, where the lateral ribs branch off from the five principal ones. *Stipulas* oval, smooth, in pairs at the base of each footstalk, soon deciduous. *Footstalks* cylindrical, slender, smooth, not half so long as the leaves. *Flower-stalks* axillary, cymose, or imperfectly umbellate, smooth, hardly so long as the leaves, drooping, with from 6 to 10 flowers ; each bearing an oblong, smooth, pale, flat, entire, veiny, membranous *bractea*, originating above the base of the flower-stalk, and for about half its length firmly united therewith, its blunt point nearly on a level with the flowers, or longer. *Fl.* greenish, delightfully fragrant, especially in an evening. *Pet.* obovate, pale lemon-coloured, destitute, like all our European species, of the scales, or *nectaries*, attached to the petals of the American ones. *Stam.* spreading, shorter than the corolla. *Anth.* yellow. *Germen* densely hairy. *Stigma* 5-lobed. *Capsule* downy, leathery, not woody, uncertain in the number of perfect cells and *seeds*.

This is certainly the Common Lime-tree of the north of Europe, which Linnæus understood by *T. europæa*, in his *Species Plantarum*, and, I presume, in his *Flora Suecica*. The Swedish writers quoted by DeCandolle confirm this point, but the plate of *Fl. Dan. t. 553* seems to be our *parvifolia*. *T. europæa* is cultivated all over England, and in many parts of Scotland, and though Ray could not meet with it indubitably wild, no one can doubt its being perfectly naturalized. The French “growing tired of the Horse Chesnut,” as Du Hamel reports, adopted this tree, for ornamental plantations, in the time of Louis XIV. It generally composes the avenues about the residences of the French as well as English gentry of that date, and Fénélon, in conformity to this taste, decorates with “flowery Lime-trees” his enchanted isle of Calypso. The bark of this, and perhaps some other species, makes the Russia garden-mats called *Bast*. Bees collect much honey from the flowers. The smooth, light, delicately white, and uniform wood, useful for some domestic purposes, served Gibbons for his inimitable carvings of flowers, dead game, &c., so often seen in old English houses. An antient Lime of great magnitude, which grew where the ancestors of Linnæus had long resided, is said to have given them their family name, *Linn* being Swedish for a Lime-tree.

2. *T. grandifolia*. Broad-leaved Downy Lime-tree.

Nectaries none. Leaves downy, especially beneath ; origin of their veins woolly. Branches hairy. Umbels three-flowered. Capsule woody, downy, turbinate, with five prominent angles.

- T. grandifolia*. *Ehrh. Beitr.* v. 5. 158. *Arb.* 8. “*Sut. Helvet.* v. 1. 317.”
- T. platyphyllos*. *Scop. Carn.* v. 1. 373. *Venten. in Sims & Kon. Ann.* v. 1. 210. “*Diss.* 6. t. 1. f. 2.” Synonyms greatly confused.
- T. platyphylla*. *DeCand. Prodr.* v. 1. 513.
- T. n.* 1030, α . *Hall. Hist.* v. 2. 1. In *Reynier's herbarium*.
- T. vulgaris platyphyllos*. *Bauh. Hist.* v. 1. p. 2. 133. f; but not of *Ray*.
- T. maximo folio*. *Ibid.* 137. f.
- T. ulmifolia*, semine hexagono. *Merr. Pin.* 118. *Pluk. Almag.* 368. *Dill. in Raii Syn.* 473.
- T. europæa*. *Bull. Fr.* t. 175.
- T. europæa* δ . *Fl. Br.* 571.
- T. sativa*. *Trag. Hist.* 1110. f.
- T. Betulæ nostratis folio*, fructu hexagono. *Pluk. Mant.* 181; a bad definition of our plant.
- T. sylvatica nostras*, foliis amplis, hirsutie pubescentibus, fructu tetragono, pentagono, aut hexagono. *Pluk. Almag.* 368.
- T. hirsuta*, *Coryli foliorum æmula*, fructu anguloso. *Pluk. Mant.* 181.
- β . *T. corallina*. *Sm. in Rees's Cycl.* n. 2. *Comp. ed.* 4. 94.
- T. europæa* β , *corallina*. *Ait. H. Kew. ed.* 1. v. 2. 229. *ed.* 2. v. 3. 299.
- T. europæa* β , *rubra*. *Sibth. Oxon.* 166.
- T. europæa* γ . *Fl. Br.* 571.
- T. europæa*. *Mill. Dict. ed.* 8. n. 2.
- T. rubra*. *DeCand. Prodr.* v. 1. 513?
- T. foliis mollitè hirsutis*, viminibus rubris, fructu tetragono. *Raii Syn. ed.* 2. 316. *ed.* 3. 473. Plukenet's synonyms rather belong to the 1st variety.

In woods and hedges.

At Whitstable, Surrey, and near Darking. *Merrett*. On the banks of the Mole, near Box-hill. *Mr. E. Forster*. Near Streatham wells, Surrey. *Mr. Dubois* in his herbarium at Oxford. In Stoken-church woods, apparently planted. *Mr. Bicheno*. About Norwich, but scarcely wild.

β . In Stoken-church woods, and at Malmsbury. *Bobart*. Not now to be found at Stoken-church. *Dr. Williams*. Only one tree observed there by *Mr. Bicheno*, in the autumn of 1824.

Tree. *June, July*; a fortnight earlier than *T. europæa*.

As tall a tree as the foregoing, with spreading, round brown branches, hairy during the first season; of a shining red in β , but whether that variety be permanent, or whether all our *Tiliæ* have not red twigs occasionally, as *Mr. E. Forster* thinks, appears doubtful. Leaves as large as in *T. europæa*, but less entire at the base, less pointed, and with rather longer footstalks; their upper surface bright green, minutely hairy about the ribs, and more or less so at the edges, between the serratures, as noticed by the too much neglected *Bulliard*; under side rather paler, not glaucous, all over finely and softly downy, the ribs and veins curiously fringed, particularly just above the origin of each,

where there are, besides, small woolly tufts. *Flower-stalks* and *bracteas* smooth, like the last, except that each *umbel* consists, almost universally, of 3 *flowers* only. These are highly fragrant, with rather longer *stamens* than the former. *Germ.* large, densely hairy. *Caps.* finely and closely downy, with 5 or 6 angles, and as many hard woody valves.

T. grandifolia is the wild Lime-tree of Switzerland and the south of Europe, as *europæa* is of the north. They are unquestionably distinct species, though Ventenat was not aware of this, nor has he thrown much light upon the European *Tilia*, whatever he may have done upon those of America. The specific names of Ehrhart are prior to his, and greatly preferable, as being Latin, like the generic one. Even Ehrhart, usually so fond of hard Greek names, seems to have felt the propriety of this principle. I wish all writers would consider it. In Rees's *Cyclopædia* the name of *corallina* is preferred to *grandifolia*, for reasons there given; and in the 4th edition of the *Compendium* I was induced by Dillenius to make four British species of *Tilia*. But this writer has here, I believe, as in other instances, added to Ray's *Synopsis* a plant which was already described there by another name. So Mr. E. Forster thinks. I therefore now unite the *corallina* to *grandifolia*, giving a preference to the latter name, because the red twigs seem not to be peculiar to any one species. The above description, except what regards this circumstance, is taken from the true *grandifolia*, nor have I been able to meet with the *flowers* or *fruit* of the β , though my excellent friends Prof. Williams and Mr. Aiton have very obligingly made every possible inquiry, the former at Oxford, and in the neighbouring country; and the latter at Kew, Osterly and Sion, as well as in the Royal plantations about Hampton Court and Windsor; without any success. The red twigs I suspect are most visible in the spring, and they certainly are sometimes observable in *T. europæa*.

Mr. E. Forster remarks that *T. grandifolia* occurs in very old plantations as frequently as the *europæa*, but not in modern ones. There are very large trees of it at Penshurst, and some at Waltham Abbey, the plantation of which is of very antient date. Mrs. Beecroft brought a specimen from Blair of Athol, where are several old trees near the house.

Some famous old Limes in the church-yard of Sedlitz in Bohemia, reported to have miraculously borne hooded *leaves*, ever since the monks of a neighbouring convent were all hanged upon them, are our *grandifolia*. I have an original specimen. See *Jacq. Fragm.* 19. t. 11. f. 3.

3. *T. parvifolia*. Small-leaved Lime-tree.

Nectaries none. Leaves smooth above; glaucous beneath, with scattered, as well as axillary, hairy blotches. Umbels compound, many-flowered. Capsule roundish, brittle, nearly smooth.

- T. parvifolia*. *Ehrh. Beitr.* v. 5. 159. *Arb.* 36. *Pl. Off.* 125. *Engl. Bot.* v. 24. t. 1705. *Comp.* 83. ed. 4. 94. *Rees's Cycl.* n. 3. *Ait. H. Kew.* ed. 2. v. 3. 299. " *Schkuhr Handb.* v. 2. 72. t. 141." *T. ulmifolia*. *Scop. Carn.* v. 1. 374. *T. microphylla*. *Venten. in Sims & Kon. Ann.* v. 1. 209. " *Diss.* 4. t. 1. f. 1." *DeCand. Prodr.* v. 1. 513. *Sav. Etrusc.* v. 1. 152. *T. cordata*. *Mill. Dict.* ed. 8. n. 1. *T. europæa* β . *Fl. Br.* 571. *T. europæa*. *Fl. Dan.* t. 553. *T. folio minore*. *Raii Syn.* ed. 2. 316. ed. 3. 473. *Bauh. Hist.* v. 1. p. 2. 137. f. *T. sylvestris*. *Trag. Hist.* 1111. *T. fœmina*. *Fuchs. Hist.* 862. f. *Ic.* 498. f. *Dalech. Hist.* 89. f. *Matth. Valgr.* v. 1. 157. f. *T. n.* 1030, β . *Hall. Hist.* v. 2. 1.

In woods.

Frequent in Essex and Sussex, as well as in Lincolnshire and elsewhere. *Ray*. In Stoken-church woods plentifully. *Mr. Bichen*. Perhaps the only true native Lime-tree in Britain. *Mr. E. Forster*.

Tree. *August*, a month later than *T. europæa*.

Distinguished, at first sight, from both the foregoing species by its much smaller *leaves*, only 2 inches broad, sometimes scarcely longer than their slender *footstalks*, roundish heart-shaped, pointed, sharply serrated, unequal at the base, often lobed towards the point; dark green and quite smooth above; glaucous beneath, with brown hairy tufts at the origin of each of their principal veins, as well as broad hairy blotches scattered over the surface; but these last are not invariably present. *Fl.* smaller than in either of the former, very fragrant like a Honeysuckle, placed many together, in double or aggregate umbels or corymbs. *Bractæas* seldom 2 inches long. *Germen* depressed, densely woolly. *Stigma* deeply five-lobed. *Capsules* sparingly perfected, turbinate, slightly angular, thin and brittle, almost smooth, rarely containing more than one *seed*.

These three naturalized, if not all originally indigenous, species of *Tilia* being now, it is hoped, clearly distinguished, it may be worth the while of those who make use of their wood, to observe whether there be any difference between them as to its properties. According to the analogy of our Elms, *T. parvifolia* should have the hardest wood, of the closest grain. This species being planted along with the first and second, in avenues or parks, will ensure a longer succession of flowers than any of them alone. The American kinds, with their white-backed *leaves*, make also an agreeable variety, and their *flowers* are very sweet-scented.

269. CISTUS. *Cistus*.

Linn. Gen. 271. *Fl. Br.* 572. *Lam. t.* 477. *Haller Hist.* v. 2. 2.
Helianthemum. Tourn. t. 128. *Juss.* 294. *Gærtn. t.* 76.

Nat. Ord. Rotacæ. Linn. 20. *Cisti. Juss.* 80.

Cal. inferior, of 5 unequal, concave, permanent, partly membranous, leaves; the 2 outermost larger or smaller than the rest. *Pet.* 5, much larger than the calyx, equal, spreading, roundish, with short claws. *Filam.* numerous, capillary, shorter than the corolla. *Anth.* small, oval. *Germen* superior, nearly globular. *Style* undivided, various in length and direction. *Stigma* capitate. *Caps.* angular, invested with the closed permanent calyx of 5, 10, or 3 more or less complete, cells, and as many valves; partitions from the centre of each valve, sometimes very narrow. *Seeds* numerous, small, angular, attached to the inner margin of each partition.

Stem shrubby, or herbaceous. *Leaves* simple, opposite or alternate, entire, with or without *stipulas*, mostly stalked, more or less downy or hairy. *Fl.* stalked, generally aggregate, terminal, yellow, white, or red, inodorous. *Stam.* in some irritable. *Caps.* in the *Cistus* of Tournefort and his followers, woody, of 5 or 10 cells, but no central column; in their *Helianthemum* more membranous, of 1 or 3 cells, the partitions in several species not broad enough to meet in the centre.

Linnæus remarks, *Fund. Bot. sect.* 170, that "there rarely occurs a genus in which some part of the fructification does not wander;" (prove uncertain in character, or not strictly limited). Such is the case with the *seed-vessel*, and in some measure with the *calyx*, in *Cistus*. The latter part always indeed consists of 3 inner and 2 outer leaves, but this difference is most observable in the *Helianthemum* tribe, whose 2 outer calyx-leaves are much the smallest. The *capsule* moreover in this tribe has but 3 valves, each with a central partition, as in every *Cistus*; but in some these partitions are not broad enough to make 3 perfect cells, whence Jussieu proposes a single-celled *capsule* for the chief character of his *Helianthemum*; but in several species the separation is complete, and by this rule we might as well subdivide *Helianthemum*, as separate it from *Cistus*. Linnæus had carefully considered the question, and I think him most in the right. Schre-

ber, Haller, Willdenow, and even Lamarck, follow him. If however the genus were allowed, which is a matter of opinion, the name is altogether inadmissible. It is the same as *Helianthus*, in meaning and derivation, the termination only being varied.

* *Dwarf shrubs, without stipulas.*

1. *C. marifolius*. Hoary Dwarf Cistus.

Stem shrubby, dwarf. Stipulas none. Leaves opposite, stalked, oblong, flat; downy and hoary beneath.

C. marifolius. Linn. *Sp. Pl.* 741. Willd. *v.* 2. 1193. *Fl. Br.* 572. *Engl. Bot.* *v.* 6. *t.* 396. Berk. *Outl.* *v.* 2. 150. *Sym. Syn.* 126. *Davies Welsh Botanol.* 53. *Hook. Lond.* *t.* 171.

C. hirsutus. *Huds.* 232.

C. anglicus. Linn. *Mant.* 245. *With.* 490. Berk. *Syn.* *v.* 2. 163.

C. canus. *Jacq. Austr.* *t.* 277.

Helianthemum alpinum, folio Pilosellæ minoris Fuchsii. *Raii Syn.* 342. *Bauh. Hist.* *v.* 2. 18. *f.* ?

H. serpilli folio incano, flore minore luteo inodoro. *Dill. Elth.* *v.* 1. 177. *t.* 145. *f.* 173.

Chamæcistus luteus, thymi durioris folio. *Barrel. Ic.* *t.* 441.

On alpine rocks, but rare.

On some rocks near Kendal, Westmoreland, and about Cartmelwells, Lancashire, plentifully. *Ray*. At Gloddæth, near Conway, Carnarvonshire. *Mr. Lightfoot's herbarium*. On Diserth castle hill, Flintshire, plentifully. *Bingley's Tour in North Wales*, *ed.* 2. *v.* 1. 91. On the steeper sides of Arthur's Round Table, Carnarvonshire. *Rev. H. Davies*. On Cronkley Fell, Yorkshire. *Mr. Wm. Robertson*.

Shrub. *May, June*.

Root strong and woody. Stems woody; subdivided and decumbent at the base, with several hoary, round, leafy, ascending branches, 3 or 4 inches high, each terminating in 3 or 4 small, corymbose, bright-yellow flowers, sometimes formed of 4 petals only. Leaves ovate, acute, entire, flat, varying from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch in length, on broadish hoary footstalks; clothed on both sides with close hairs; the upper green; lower hoary with dense entangled pubescence. Stipulas entirely wanting. Flower-stalks reddish, downy. Bractæas lanceolate, fringed. Cal. hairy, of 5 leaves. Pet. obovate, slightly waved. Germen ovate, smooth, with 3 or 4 hairy lines. Style bent in the middle. I have never seen the capsule.

The above synonyms are I believe correct; but *C. canus* of Linnæus is a different plant; and *marifolius* of Cavanilles, *Ic.* *v.* 2. 34. *t.* 143, does not well answer in its leaves to ours.

* * *Herbaceous, without stipulas.*

2. *C. guttatus*. Spotted Annual *Cistus*.

Stem herbaceous. Stipulas and bracteas none. Leaves opposite, lanceolate, three-ribbed.

C. guttatus. Linn. *Sp. Pl.* 741. Willd. v. 2. 1198. *Fl. Br.* 573. *Engl. Bot.* v. 8. t. 544. *Fl. Græc.* t. 498. *Curt. Lond. fasc.* 6. t. 33. *Dicks. H. Sicc. fasc.* 9. 7. *Davies Welsh Botanol.* 53.

C. serratus. Cavan. *Ic.* v. 2. 57. t. 175. f. 1. Willd. v. 2. 1198.

C. flore pallido, punicante maculâ insignito. Raii *Syn.* 342.

C. annuus, flore maculato. Ger. *Em.* 1281. f.

C. annuus, flore guttato. Bauh. *Hist.* v. 2. 14. f.

Helianthemum flore maculoso. Column. *Ecphr.* v. 2. 78. t. 77. f. 1.

In sandy pastures, very uncommon.

In Jersey. Sherard. In Anglesea, where it was found by Mr. Brewer, and not in the isle of Man. Rev. H. Davies.

Annual. June, July.

Root small, tapering. Herb deep green, hairy, glutinous, and rather fragrant, in every part; the hairs spreading. Stem solitary, not above a span high, except in a cultivated state, erect, slightly branched, leafy. Leaves opposite, sessile, $1\frac{1}{2}$ or 2 inches long, elliptic-lanceolate, with 3 strong ribs. Clusters one or more, terminal, erect, simple, hairy, of several flowers, without bracteas, though now and then leafy about the lower part. Fl. erect, yellow, with a blood-red spot near the base of each petal. Cal. very hairy. The petals are sometimes notched, as in *Engl. Bot.* when the plant becomes *C. serratus*, a most trifling variety. They expand very early in a morning and fall in 4 or 5 hours. Style elongated after the flowering, bent downwards. Caps. drooping, small, of 3 cells.

*** *Herbaceous, with stipulas.*

3. *C. ledifolius*. Ledum-leaved *Cistus*.

Herbaceous, downy, with stipulas. Leaves lanceolate. Flower-stalks solitary, erect, opposite to the leaves, shorter than the calyx.

C. ledifolius. Linn. *Sp. Pl.* 742. Willd. v. 2. 1199. *Fl. Br.* 574. *Engl. Bot.* v. 34. t. 2414.

C. salicifolius. Huds. 233. *With.* 491.

C. ledi folio. Bauh. *Pin.* 465.

C. annuus, folio ledi. Lob. *Ic.* v. 2. 118. f. *Obs.* 552. f.

C. annuus longifolius Lobelii. Ger. *Em.* 1280. f.

C. annuus, folio ledi, flore luteo. Bauh. *Hist.* v. 2. 14. f.

C. annuus alter Lobelii. Dalech. *Hist.* 229. f.

On sandy ground in the south, extremely rare.

On Brent downs, Somersetshire. Huds. Found there likewise by the Rev. Mr. Lightfoot, and the late Mr. Dickson.

Annual. June, July.

Root simple at the crown, branching below. *Stems* one or more, erect, simple, leafy, round, clothed, like the rest of the herbage, with fine, soft, spreading hairs. *Leaves* opposite, stalked, elliptic-lanceolate, flat, $1\frac{1}{2}$ inch long, single-ribbed, with many straight veins; less sharply pointed than is represented in the old wooden cuts. *Stipulas* linear-lanceolate, acute, rather convex or revolute, not half so long as the leaves. *Fl.* solitary, on short thick hairy stalks, opposite to each leaf on the upper half of the stem. *Bracteas* none. *Cal.* rough, most hairy at the ribs and margin. *Pet.* small, obovate, entire, pale yellow, very fugacious, and occasionally wanting. *Caps.* large, triangular, polished, hairy at the upper part of the angles, single-celled, the *receptacles* being not at all prominent so as to form partitions. *Seeds* numerous, pale, roundish.

The *C. annuus* of Clusius, *Hist. v.* 1. 76, whose figure is repeated in Gerarde, Lobel, &c., and copied in J. Bauhin, v. 2. 13, is more like some states of the present plant than that for which it was apparently intended, *C. salicifolius*. These figures perhaps misled Mr. Hudson.

**** *Dwarf shrubs, with stipulas.*

4. *C. surrejanus*. Dotted-leaved *Cistus*.

Shrubby, procumbent, with stipulas. Leaves ovate-oblong, hairy and dotted beneath. Petals lanceolate.

C. surrejanus. Linn. *Sp. Pl.* 743. Willd v. 2. 1202. *Fl. Br.* 575. *Engl. Bot.* v. 31. t. 2207.

C. Helianthemum δ . *Huds.* 233.

C. suffruticosus procumbens stipulatus, foliis ovato-oblongis subpilosis, petalis lanceolatis. Hill *Fl. Br.* 274. t. 27. f. 1; bad.

Helianthemum vulgare, petalis florum perangustis. Dill. in Raii *Syn.* 341. *Hort. Elth.* 177. t. 145. f. 174.

On chalky hills, rare.

Near Croydon, Surrey. Mr. Edward Du Bois. Found, in 1826, on the borders of a wood, on Addington hill, near Croydon, by Mr. W. Christy, jun. Some doubts still exist as to the permanency of this species.

Shrub. July, August.

Stems prostrate, simple, a foot long, leafy, round, clothed with fine, soft, depressed, entangled hairs. *Leaves* above an inch in length, stalked, spreading, ovate-oblong, or lanceolate, obtuse, flat, entire; the upper side green and nearly naked; under paler, with a few starry hairs, and several scattered little hollows or depressions, occasioning prominences on the upper surface, which sometimes bear 2 or 3 simple hairs. *Stipulas* lanceolate, fringed, full twice as long as the footstalks. *Clusters* terminal, simple, recurved, downy, many-flowered. *Bracteas* small, obtuse, fringed, not hoary. *Cal.* strongly ribbed, furrowed,

hairy, twisted in the bud. *Pet.* longer or shorter than the calyx, yellow, lanceolate, partly notched or serrated. *Stam.* sometimes very short, as if imperfect. *Germen* densely hairy. *Style* bent. *Caps.* with 3 very slight partitions.

Mr. Lightfoot in his herbarium has noted the depressions on the backs of the leaves, which, with other marks, clearly determine this as a species, though it has never been found but in Surrey.

5. *C. Helianthemum*. Common Dwarf *Cistus*.

Shrubby, procumbent, with fringed stipulas. Leaves elliptic-oblong; white and downy beneath. Calyx-ribs bristly; its outer leaves lanceolate, fringed.

C. Helianthemum. *Linn. Sp. Pl.* 744. *Willd. v. 2.* 1209. *Fl. Br.* 575. *Engl. Bot. v. 19. t.* 1321. *Curt. Lond. fasc. 5. t.* 36. *Hook. Scot.* 170. *Fl. Dan. t.* 101.

C. n. 1033. *Hall. Hist. v. 2. 3.*

Helianthemum vulgare. *Raii Syn.* 341.

H. anglicum luteum vel album. *Ger. Em.* 1282. *f.*

Chamæcistus vulgaris, flore luteo. *Loes. Pruss.* 43. *t.* 8.

Flos solis, seu *Panaces chironium*. *Matth. Valgr. v. 2.* 103. *f.*

Panax chironium, sive *Flos solis*. *Camer. Epit.* 501. *f.*

Hyssopus campestris. *Trag. Hist.* 221. *f.*

In hilly pastures, on a chalky or gravelly soil.

Shrub. *July, August.*

Of a more dwarf habit than the last. *Root* woody, bearing many procumbent, or slightly ascending, round, downy, simple, leafy stems, each terminating in a simple downy cluster, of bright yellow flowers, expanding in sunshine only, when their stamens if touched spread slowly, and lie down upon the petals. *Bractes* lanceolate, smooth, fringed, one at the base of each flower-stalk. These partial stalks are slender, hoary, various in direction, more reflexed as the fruit advances. *Calyx* smooth, or scarcely at all downy, between the strong bristly ribs of its 3 larger reddish leaves; the 2 outer leaves ten times smaller, spreading, lanceolate, mostly acute, green, smooth on both sides, their edges fringed with numerous bristly hairs. *Germen* globose, downy. *Capsule* with very narrow receptacles, or imperfect partitions. The leaves of this species vary in breadth, and are more or less revolute; green above, besprinkled with a few hairs; densely downy, white, and hairy beneath. Their usual form is linear-oblong, somewhat elliptical. *Stipulas* lanceolate, acute, fringed, green on both sides, longer than the footstalks.

Ray says the flowers are very rarely white; they are sometimes double in gardens. This is a variable species, but less so than authors make it. Few plants are more difficult to define than the smaller kinds of *Cistus*. The *roseus* and *mutabilis* of Jacquin

surely differ from this, and numerous species of the south of Europe, and the Alps, require to be studied and compared by a skilful and patient observer.

6. *C. tomentosus*. Downy-cupped Cistus.

Shrubby, procumbent, with hoary stipulas. Leaves elliptic-oblong; snow-white, with starry down, beneath. Calyx all over hoary, with hairy ribs; its outer leaves obtuse.

C. tomentosus. Scop. Carn. ed. 2. v. 1. 376. t. 24. Engl. Bot. v. 31. t. 2208. Comp. ed. 4. 95.

C. Helianthemum. Ehrh. Arb. 126?

On the mountains of Scotland. Mr. G. Don.

Shrub. July.

A larger plant than the foregoing, with broader leaves, and the flowers are conspicuous for their size as well as brilliancy. The more pure white, and starry down, of the backs of the leaves, the hoariness of the stipulas, and of every part of the calyx, in Mr. Don's original specimen, are remarkable; and the obovate obtuse form of the 2 outer calyx-leaves, which are hoary all over, and less fringed than in *C. Helianthemum*, should seem a good specific character. Ehrhart's specimen is weak, and less downy, as if it had been drawn up by the neighbourhood of other plants. His stipulas moreover are green and fringed. The leaves on young lateral shoots are peculiarly rounded. When cultivated together, the difference between these two plants is striking. What such great practical observers as Scopoli, G. Don, and our most acute, justly lamented, Dickson have asserted, I would not hastily reject; nor can I, with my worthy friend Prof. Hooker, think *C. tomentosus* "not even a well-marked variety." It merits at least some examination in its native places of growth. In gardens it bears the name of *C. canus*; but the real *canus* has no stipulas.

7. *C. polifolius*. White Mountain Cistus.

Shrubby, procumbent, with somewhat hairy stipulas. Pubescence starry. Leaves oblong, revolute, white and downy beneath. Calyx slightly hairy; its outer leaves fringed.

C. polifolius. Linn. Sp. Pl. 745. Willd. v. 2. 1211. Fl. Br. 576. Engl. Bot. v. 19. t. 1322.

C. humilis alpinus durior, polii nostratis folio candicante. Pluk. Almag. 107. Phyt. t. 23. f. 6.

Helianthemum montanum, polii folio incano, flore candido. Dill. Elth. 175. t. 145. f. 172.

Chamæcistus montanus, polii folio. Raii Syn. 342. Hill. Fl. Br. 274. t. 27. f. 2; very bad.

On stony hills, near the sea, very rare.

28 POLYANDRIA—PENTAGYNIA. *Pæonia*.

On Brent downs, Somersetshire. *Plukenet*. Plentifully on the top and about the middle of the hill, on Brent downs. *Dill. in Linn. Corresp. v. 2. 132.* At Babbicombe, near Newton Abbot, Devonshire. *Rev. Aaron Neck*. On rocks near the sea, at Torquay. *Dean of Bristol. 1825.*

Shrub. *June, July.*

In size and habit like *C. Helianthemum*, but essentially distinct, though not known in any other part of the world than the places above specified. The *stems* are hoary with fine, close-pressed hairs. *Leaves* always revolute; convex and green on the upper side, covered with starry hairs, not entangled with each other; white and densely downy, with similar but entangled hairs, beneath; the mid-rib very prominent. *Stipulas* linear-lanceolate, rather acute than blunt, most hairy at the margin, not at all downy. *Cal.* membranous, with red ribs bearing a very few hairs here and there, the intermediate spaces quite smooth and naked; the 2 outer leaves linear, channelled, fringed. *Pet.* white, sometimes crenate; their claws yellow. *Caps.* with 3 slight partitions.

Linnæus has very incautiously confounded this and *C. marifolius* in his *Mantissa* 2. 145, under the name of *C. anglicus*. *C. apenninus* more nearly resembles our *polifolius*; but differs in its simple pubescence, and hoary *calyx* without hairs on the ribs.

POLYANDRIA PENTAGYNIA.

270. PÆONIA. Piony.

Linn. Gen. 273. Juss. 234. Tourn. t. 146. Lam. t. 481. Gærtn. t. 65.

Nat. Ord. *Multisiliquæ*. Linn. 26. *Ranunculaceæ*. Juss. 61.

Cal. inferior, of 5 roundish, concave, reflexed, unequal, permanent leaves. *Pet.* 5, roundish, concave, spreading, contracted at the base, larger than the calyx. *Filam.* very numerous, capillary, much shorter than the corolla. *Anth.* terminal, erect, oblong, quadrangular, of 4 cells. *Germ.* from 2 to 4, 5, or more, sessile, ovate, downy. *Styles* none. *Stigmas* oblong, curved, compressed, obtuse, coloured. *Capsules (follicles)* as many as the germens, ovate-oblong, spreading widely, coriaceous, burst-

ing along the inner side. *Seeds* numerous, oval polished, ranged along the edges of the follicle.

Mostly herbaceous, with fleshy perennial *roots*. *Leaves* alternate, once or twice ternate, entire or cut. *Fl.* solitary, large, stalked, crimson or white, often double. *Germens* usually multiplied by culture. Abortive seeds coloured.

1. *P. corallina*. Entire-leaved Piony.

Leaves twice ternate; leaflets ovate, undivided, smooth. Follicles downy, recurved.

P. corallina. Retz. *Obs. fasc.* 3. 34. Willd. *Sp. Pl.* v. 2. 1221. *Engl. Bot.* v. 22. t. 1513. *Comp. ed.* 4. 95. *Ait. H. Kew. ed.* 2. v. 3. 315. DeCand. *Syst.* v. 1. 388.

P. officinalis β. Linn. *Sp. Pl.* 747. Mill. *Illustr. t.* 47.

P. mas. Matth. *Valgr.* v. 2. 265. f. Camer. *Epit.* 657. f. Dod. *Pempt.* 194. f. Ger. *Em.* 980. f. Lob. *Ic.* 684. f. 685. f.

Pæonia. Palmberg *Sert.* 386. f.

On islands in the river Severn.

Abundantly in the rocky clefts of the Steep Holmes, in the Severn. Mr. F. B. Wright. On a rabbit-warren about 2 miles from Gravesend, according to Gerarde; but no other person has found it there.

Perennial. *May, June.*

Root fleshy, knobbed. *Herb* smooth, about 2 feet high. *Stems* simple, round, leafy, polished, reddish. *Leaves* twice ternate; leaflets elliptical, undivided, of a dark shining green. The uppermost leaf is sometimes ternate only, or simple; rarely pinnate, as in *Engl. Bot.* and *Miller*. *Fl.* about 4 inches broad, crimson, with yellow *anthers*. *Germens* 2, 3, or 4, white with purple *stigmas*. *Seed-vessels* internally reddish and polished. *Seeds* black and shining; the interspersed abortive ones angular, scarlet.

A very handsome plant, far less common in gardens than *P. officinalis*, the *fæmina* of old authors, and scarcely ever seen double, as the latter usually is.

271. DELPHINIUM. Larkspur.

Linn. *Gen.* 274. Juss. 234. *Fl. Br.* 577. Tourn. t. 241. Lam. t. 482. Gært. t. 65.

Nat. Ord. see n. 270.

Cal. none. *Pet.* 5, inferior, unequal, ranged in a circle, spreading; the upper one extended behind into a long, tubular, straight, bluntish spur; the rest ovate-oblong,

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with claws, various in various species. *Nectary* divided, of 1 or 2 sessile leaves, placed in front within the row of petals, on the upper side, extended behind in the form of a tube contained in the spur of the uppermost petal. *Filam.* numerous, awl-shaped, dilated at the base, much shorter than the corolla, directed upwards. *Anth.* roundish, small, erect. *Germ.* superior, 3 or 1, or 5, ovate, each terminating in a *style* shorter than the stamens. *Stigmas* simple, reflexed. *Caps.* (*follicles*) as many as the germens, ovate-oblong, or somewhat cylindrical, of 1 valve, bursting at the inner side. *Seeds* numerous, angular, rough, at the edges of the capsule.

Annual or perennial herbs. *Leaves* much divided, for the most part stalked. *Fl.* in clusters, blue or violet, varying to red or white, with bracteated partial stalks.

1. *D. Consolida*. Field Larkspur.

Capsule solitary. Nectary of a single leaf. Stem subdivided, spreading.

D. Consolida. Linn. *Sp. Pl.* 748. Willd. v. 2. 1226. *Fl. Br.* 577. *Engl. Bot.* v. 26. t. 1839. *Fl. Græc.* t. 504. DeCand. *Syst.* v. 1. 343. *Fl. Dan.* t. 683.

D. n. 1203. Hall. *Hist.* v. 2. 95.

D. segetum, flore cæruleo. Dill. in Raii *Syn.* 273.

D. elatius, simplici flore. Clus. *Hist.* v. 2. 206. f.

Delphinium. Riv. *Pentap. Irr.* t. 124. f. 1.

Consolida regia. Trag. *Hist.* 569. f. Fuchs. *Ic.* 239. f.

C. regalis. Brunf. *Herb.* v. 1. 84. f. 83. Camer. *Epit.* 521. f.

C. regalis sativa. Ger. *Em.* 1082. f. 1, 2.

Chamæmelum eranthemon. Fuchs. *Hist.* 27. f.

In sandy or chalky corn-fields.

Plentifully in Swaffham field, Cambridgeshire. Sherard. In several parts of that county. Relhan. Between Blackheath and Eltham. Dillenius. About Feltwell, near Brandon. Mr. Francis Smith. Near Bury St. Edmund's. Bishop of Carlisle.

Annual. June, July.

Root simple, slender. *Herb* finely downy all over, particularly the *stem* and *capsule*, so that I am unable to separate the *D. pubescens* of DeCandolle from our plant, though, being a native of Greece and other mild climates, it is more luxuriant, as will appear by *Fl. Græc.* t. 504 when published. The *stem* in ours is 18 inches or 2 feet high, erect, leafy, with alternate spreading branches. *Leaves* sessile, in many deep divisions, which are three-cleft and subdivided, with narrow, linear, acute segments. *Stipulas* none. *Clusters* terminal, lax, of but few *flowers*,

whose *petals* are, in front, of a most vivid and lasting blue; the back of each flower, as well as the *nectary*, being pale purplish, or flesh-coloured. These colours however vary much in gardens, where this species is called the Branching Larkspur, and attains the height of 3 or 4 feet. *Bracteas* at the base, and in the middle, of each partial stalk, simple or divided. *Germen* and *capsule* solitary, with a short permanent *style*. *Seeds* angular, black, very rough.

272. ACONITUM. Wolf's-bane.

Linn. Gen. 274. *Juss.* 234. *Tourn. t.* 239, 240. *Lam. t.* 482. *Gærtn. t.* 65. *DeCand. Syst. v.* 1. 364.

Nat. Ord. see *n.* 270.

Cal. none. *Pet.* 5, inferior, unequal, 4 of them in pairs, opposite; the upper one hooded, or tubular, inverted, the convex or hind part being uppermost, the deflexed point recurved; 2 lateral ones roundish, opposite, converging; 2 lowermost oblong, deflexed. *Nectaries* 2, within the hollow of the uppermost petal, on long awl-shaped stalks, tubular, drooping, oblique at the orifice, recurved at the honey-bag behind. *Filam.* numerous, broad at the base, awl-shaped, short, directed towards the upper petal, some of the innermost often dilated and abortive. *Anth.* roundish, small, erect. *Germens* superior, 3, 4, or 5, oblong. *Styles* terminal, awl-shaped, spreading. *Stigmas* simple, acute. *Caps. (follicles)*, as many as the germens, straight, ovate-oblong, of 1 valve, bursting at the inner side. *Seeds* numerous, angular, rugged, at the edges of the capsule.

Perennial herbs, of a very dangerous quality, highly narcotic and acrid. *Roots* fleshy. *Stems* erect, or twining. *Leaves* fingered and cut. *Clusters* terminal, many-flowered, bracteated. *Fl.* dark blue, whitish, or pale yellow. The *nectaries* are full of honey.

1. *A. Napellus*. Common Wolf's-bane, or Monk's-hood.

Upper petal arched at the back; lateral ones hairy at the inner side. *Germens* three, smooth. *Leaves* deeply five-cleft, cut, with linear segments, furrowed above.

A. Napellus. *Linn. Sp. Pl.* 751. *Willd. v.* 2. 1235. *Woodv. t.* 5. *Purt. v.* 3. 47, note. *Seringue Acon.* 152. *t.* 15. *f.* 41, 42, 50.

A. vulgare. *DeCand. Syst. v.* 1. 371.

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A. n. 1197. *Hall. Hist. v.* 2. 90.

Napellus. *Dod. Pempt.* 442. *f.*

N. verus cæruleus. *Ger. Em.* 972. *f.* *Lob. Ic.* 679. *f.*

Eisen hütlin. *Trag. Hist.* 248. *f.*

Lycotconum sativum tricarpum. *Cord. Hist.* 145. *same f.*

In watery places.

By the side of the river Teme, Herefordshire; and still more abundantly on the banks of a brook, running into that river, to all appearance truly wild. *Rev. Edward Whitehead, Fellow of Corpus Christi college, Oxford.* 1819. In watery ground on both sides of a brook, at Ford, near Wiveliscomb, Somersetshire, in great plenty, for the course of a mile or more, as well as in other similar situations in that neighbourhood. *Mr. Thomas Clark, jun.*; from whom I received specimens, in July 1825.

Perennial. *June, July.*

Root tapering. *Stem* erect, simple, leafy, clothed with minute close hairs, and terminating in a solitary, simple, upright cluster of large dark-blue *flowers*, without scent. *Leaves* alternate, on short stalks, divided to the base into 5 lobes, cut into numerous, linear, acute, somewhat revolute segments; nearly smooth on both sides; paler beneath; marked on the upper side with a furrow along the course of the mid-rib. Our plant is certainly the original *Napellus*, from which Prof. DeCandolle has separated several formerly-supposed varieties, having broader *leaves*, but of which he very candidly expresses his doubts, whether they are good species. At any rate I would here retain the old well-known specific name, though Linnæus, who made no distinction between these plants, has in his herbarium for *Napellus* the *A. neubergense* of DeCandolle, which moreover is figured, under his inspection, in the Stockholm Transactions for 1739, *t.* 2, as *A. Napellus*, and given as such by Ehrhart in his *Pl. Off.* 87. *A. paniculatum* of DeCandolle, which is what Störck happened to make use of, and to publish, for *Napellus*, and which is Haller's *n.* 1198. belongs to *A. Cammarum* of Linnæus.

273. AQUILEGIA. Columbine.

Linn. Gen. 275. *Juss.* 234. *Fl. Br.* 578. *Tourn. t.* 242. *Lam. t.* 488. *Gartn. t.* 118.

Nat. Ord. see. *n.* 270.

Cal. none. *Pet* 5, inferior, ovate, mostly pointed, nearly flat, equal, spreading. *Nect.* 5, equal, alternate with the petals, each of them tubular, gradually dilated upwards, oblique at the mouth, the outer margin ascending, the inner attached to the receptacle; their lower portion extended into a long tapering spur, obtuse at the extremity.

Filam. numerous, 30 to 40, awl-shaped, erect; the outer ones shortest; innermost abortive, dilated and corrugated, closely enfolding the germen. *Anth.* terminal, heart-shaped, erect. *Germ.* 5, superior, ovate-oblong, tapering into awl-shaped upright *styles*, with simple *stigmas*. *Caps.* (*follicles*) 5, cylindrical, pointed, parallel, straight, of 1 valve, bursting at the inner side downwards. *Seeds* numerous, ovate, smooth, keeled, at the edges of the capsule.

Perennial *herbs*, with fibrous *roots*. *Leaves* once or twice ternate, bluntly lobed and cut; the lower ones on long stalks. *Fl.* terminal, drooping, blue, purplish, scarlet, partly yellow, or green, the former colours varying to pink or white; their structure in gardens variously transformed or multiplied. Qualities slightly acrid, astringent, or bitter, scarcely dangerous, except perhaps in the seeds.

1. *A. vulgaris*. Common Columbine.

Nectaries about the length of the petals; their spurs incurved. Leaves and stem smooth. Capsules hairy.

A. vulgaris. *Linn. Sp. Pl.* 752. *Willd. v. 2.* 1245. *Fl. Br.* 578. *Engl. Bot. v. 5. t.* 297. *Hook. Scot.* 170. *DeCand. Syst. v. 1.* 334. *Fl. Dan. t.* 695.

A. n. 1195. *Hall. Hist. v. 2.* 89.

A. flore simplici. *Raii Syn.* 273. *Bauh. Hist. v. 3.* 484. *f.*

A. cærulea. *Ger. Em.* 1093. *f.*

Aquilegia. *Fuchs. Hist.* 102. *f.* *Dorst. Bot.* 30, 2. *f.*

Aquilina. *Matth. Valgr. v. 1.* 577. *f.* *Camer. Epit.* 404. *f.*

Isopyrum Dioscoridis. *Column. Phytob. 1. t.* 1.

β. *Aquilegia alpina.* *Huds.* 235; excluding the synonyms.

In meadows, pastures and thickets.

β. In more mountainous situations. At Matlock bath, Derbyshire.

Root tuberous. *Herbage* smooth and naked. *Stem* erect, 2 or 3 feet high, somewhat leafy, round, generally branched, and bearing several flowers. *Radical leaves* on long stalks, twice ternate; leaflets broadly wedge-shaped, bluntly lobed and cut, glaucous beneath; those on the stem more simple, and nearly sessile. *Fl.* pendulous, bright purple, on purplish, somewhat downy, stalks. *Pet.* pointed. *Nect.* much incurved at the end of the spur. *Germ.* and *caps.* hairy. Dr. Hooker misquotes *Engl. Bot.*, as the *inner stamens* are there represented as imperfect.

β. Has scarcely more than one *flower* on each stem, and the *nectaries* are rather less curved. The whole plant is less luxuriant and more elegant. *A. alpina* of Linnæus bears blue *flowers* twice

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the size of the *vulgaris*. Double varieties of our Common Columbine, with white, pink, or dark crimson flowers, are frequent in gardens, and there is one whose *nectaries* are obliterated, and the *petals* greatly multiplied, usually rose-coloured.

274. STRATIOTES. Water-soldier.

Linn. Gen. 277. *Juss.* 67. *Fl. Br.* 579. *Lam. t.* 489. *Gærtn. t.* 14. *Nat. Ord. Palmæ.* *Linn.* 1. *Hydrocharides.* *Juss.* 22. *Decand.* 115.

Cal. superior, of 1 leaf, tubular, erect, the border in 3 deep, deciduous segments. *Pet.* 3, alternate with the calyx, and twice as long, obovate, concave, slightly spreading. *Filam.* about 20 or fewer, shorter than the segments of the calyx, and proceeding from its tube. *Anth.* vertical, awl-shaped. *Germ.* inferior, elliptical, obtusely triangular. *Styles* 6, deeply cloven, full as long as the stamens. *Stigmas* simple. *Berry* coated, oval, with 6 or more cells, and as many angles, tapering at each end. *Seeds* numerous, obovate, in 2 rows.

Aquatic herbs, with radical, ribbed, simple, serrated or entire *leaves*, and white *flowers*, on radical *stalks*. Each *flower* is accompanied by a permanent *sheath*, or *bractea*, of a single leaf, variously divided, which is not wanted to strengthen the generic character, and indeed does not belong to the parts of fructification. There are some Indian species with fewer stamens than ours, which is the type of the genus.

1. *S. aloides*. Water Aloe, or Water-soldier.

Leaves sword-shaped, channelled, with a prominent rib, and sharp marginal prickles.

S. aloides. *Linn. Sp. Pl.* 754. *Willd. v.* 4. 820. *Fl. Br.* 579. *Engl. Bot. v.* 6. *t.* 379. *Hook. Scot.* 171. *Mill. Illustr. t.* 50. *Fl. Dan. t.* 337.

S. foliis aloes, semine longo. *Raii Syn.* 290.

S. aquaticus. *Dalech. Hist.* 1061. *f.*

Militaris aizoides. *Ger. Em.* 825. *f.* *Lob. Ic.* 375. *f.*

Aloe sive Aizoon palustre. *Bauh. Hist. v.* 3. 778. *f.*

Water Aloe. *Pet. H. Brit. t.* 71. *f.* 5.

In deep fen ditches and pools.

Plentiful in the isle of Ely, and in the marshy parts of Lincolnshire and Norfolk. Also, according to Withering, in Cheshire and Yorkshire.

Perennial. *July*.

A stoloniferous, smooth, floating herb, with numerous radical leaves, and a solitary central *flower-stalk*, no stem. The parent plant sinks to the bottom after flowering, and sends out long simple runners, each terminating in a leaf-bud, or young plant, which first takes root in the mud, by several long fibres, and in the following summer rises to the surface of the water, blossoms, and then again subsides to ripen its seeds, and throw out fresh runners, each tuft of leaves flowering but once. The leaves are a span long or more, acute, highly vascular, fringed with very sharp saw-like teeth. Flowers white, large and handsome, the stalk firm, stout, two-edged, much shorter than the leaves. The anthers are occasionally imperfect in one flower, the stigmas in another, whence some curious but superficial observers have thought the flowers dioecious; but such casual imperfection in those parts is frequent in plants that increase much by root. The *Stratiotes* fills our ditches in summer, with a close phalanx of sword-like leaves, whence its name, from *στρατός*, an army, in Dioscorides, whose description cannot be mistaken, though Dr. Sibthorp did not notice this plant in Greece, any more than the *Sagittaria*, which some commentators have mistaken for it. See *Matth. Valgr. v. 2.* 482, 483.

POLYANDRIA POLYGYNIA.

275. ANEMONE. Anemone.

Linn. Gen. 279. *Juss.* 232. *Fl. Br.* 580. *Tourn. t.* 147. *Lam. t.* 496.

Gærtn. t. 74. *DeCand. Syst. v. 1.* 188.

Pulsatilla. Tourn. t. 148. Seeds with feathery tails.

Anemonoides. Dill. Gen. 107. *t.* 4. Seeds simply pointed. Petals 6.

Anemone-ranunculus. Ibid. t. 4. Seeds simply pointed. Petals 5.

Nat. Ord. Multisiliquæ. Linn. 26. *Ranunculaceæ. Juss.* 61.

See *n.* 270—273.

Cal. none. *Pet.* from 5 to 15, inferior, regular, in one or more rows, imbricated in the bud, elliptical or oblong, deciduous. *Filam.* numerous, capillary, much shorter than the corolla. *Anth.* terminal, of 2 round lobes, bursting laterally. *Germ.* superior, numerous, collected into

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a round or oblong head. *Styles* tapering, short. *Stigmas* simple, bluntish. *Seeds* numerous, pointed, tipped with the permanent *styles*, which in some species become feathery *tails*.

Herbs with tuberous roots. *Stem* none. *Leaves* stalked, more or less divided or compound. *Fl.* solitary or aggregate, scentless, on radical stalks, with a leafy *involucrum*, or *bractea*, more or less remote from the flower. *Corolla* blue, purplish, red, white, or yellow, very variable.

1. *A. Pulsatilla*. Pasque-flower Anemone.

Flower solitary, nearly upright. *Involucrum* in deep linear segments. *Petals* six, erect. *Seeds* with feathery tails. *Leaves* doubly pinnate, cut, with linear lobes.

A. Pulsatilla. Linn. *Sp. Pl.* 759. Willd. *v.* 2. 1274. *Fl. Br.* 580. *Engl. Bot.* *v.* 1. *t.* 51. Hook. *Lond.* *t.* 44, according to the letterpress. *Relh. ed.* 1. 208. *t.* 3. *DeCand. Syst.* *v.* 1. 191. *Fl. Dan.* *t.* 153. *Bull. Fr.* *t.* 49. *Ehrh. Pl. Off.* 135.

A. pratensis. Sibth. 169. *With.* 498.

A. n. 1146. Hall. *Hist.* *v.* 2. 61.

Pulsatilla. Matth. *Valgr.* *v.* 1. 568. *f.* Camer. *Epit.* 392. *f.* Dod. *Pempt.* 433. *f.* 1.

P. folio crassiore, et majore flore. Raii *Syn.* 260. Bauh. *Pin.* 177.

P. vulgaris. Ger. *Em.* 385. *f.* Lob. *Ik.* 281. *f.*

In high open chalky pastures.

Perennial. *April, May.*

Root rather woody, sweet according to Haller, though the herb itself is highly acrid, and blisters the skin. *Leaves* doubly pinnate, the leaflets deeply pinnatifid, with very narrow, nearly linear, acute, channelled, hairy segments. *Stalk* solitary, 4 or 5 inches high, round, hairy. *Involucrum* in many deep linear segments, all united at the base. *Flower* of a dull violet blue, externally silky. *Pet.* near $1\frac{1}{2}$ inch long, moderately spreading, but straight, not recurved as in the true *A. pratensis*, *Herba venti* of Tragus, 413, whose flower moreover is but half the size of this, and more drooping. The *seeds*, with their long, feathery, purplish tails, spreading in every direction, form a round head, and are finally blown away by the wind. Gerarde expressly informs us that he himself was "moved to name" this the Pasque-flower, or Easter-flower, because of the time of its appearance. There is therefore no occasion to seek an explanation of this name in the reported use of the flowers, for colouring the Paschal eggs of the catholicks, or the Scotch; especially as these flowers are said to yield a green, not a purple dye. See Hooker, as above.

2. *A. nemorosa*. Wood Anemone.

Flower solitary. Petals six, elliptical. Seeds pointed, without tails. Involucrum of three ternate or quinate, stalked, lobed and cut, leaves.

A. nemorosa. Linn. *Sp. Pl.* 762. Willd. *v.* 2. 1281. *Fl. Br.* 581. *Engl. Bot.* *v.* 5. *t.* 355. *Curt. Lond. fasc.* 2. *t.* 38. *Hook. Scot.* 171. *DeCand. Syst.* *v.* 1. 203. *Fl. Dan. t.* 549. *Bull. Fr. t.* 3. *Ehrh. Pl. Off.* 145.

A. n. 1154. *Hall. Hist.* *v.* 2. 64.

A. nemorum alba. *Raii Syn.* 259. *Ger. Em.* 383. *f.*

A. quinta. *Dod. Pempt.* 435. *f.*

Ranunculi quarta species, lactea. *Fuchs. Hist.* 161. *f.*

Ranunculus nemorosus. *Lob. Ic.* 673. *f.*

Herba sylvestris, ignoti nominis. *Brunf. Herb.* *v.* 2. 80. *f.*

In groves, thickets, and heathy ground, abundantly.

Perennial. *April*.

Root tuberous, horizontal, nearly cylindrical. *Leaves* on long foot-stalks, ternate or quinate, mostly three-cleft, always irregularly cut; the margin and ribs slightly hairy. *Involucrum* of 3 similar leaves, with shorter stalks, above half way up the *flower-stalk*, which is simple and a little hairy. *Flower* rather drooping, always solitary. *Pet.* white, often purplish at the back, each above half an inch long. *Germens* downy. *Seeds* beaked with the *style* almost their own length.

The numerous *stamens*, changing, as in several of the foreign kinds, into small lanceolate *petals*, make a pretty double *flower*, more lasting than the single one, and sometimes preserved in country gardens. It requires a very pure air. Goats only can feed with safety on this acrid plant; to sheep it is dangerous, and horses and cows leave it untouched.

3. *A. apennina*. Blue Mountain Anemone.

Flower solitary. Petals numerous, lanceolate. Seeds pointed, without tails. Involucrum of three ternate, stalked, deeply cut leaves.

A. apennina. Linn. *Sp. Pl.* 762. Willd. *v.* 2. 1282. *Fl. Br.* 581. *Engl. Bot.* *v.* 15. *t.* 1062. *Curt. Lond. fasc.* 6. *t.* 35. *DeCand. Syst.* *v.* 1. 202.

A. secunda. *Dod. Pempt.* 434. *f.*

A. geraniifolia. *Ger. Em.* 377. *f.* *Bauh. Hist.* *v.* 3. 405. *f.* *Raii Hist.* *v.* 1. 625.

A. tuberosa geraniifolia. *Lob. Ic.* 280. *f.*

A. hortensis tenuifolia, simplici flore prima. *Clus. Hist.* 254. *f.*

Ranunculus nemorosus, flore purpureo-cæruleo. *Dill. in Raii Syn.* 259.

R. nemorosus flore cæruleo, duplex, Apennini montis. *Mentz. Pugill. t. 8.*

In groves in the central part of England, but rare.

In Wimbleton woods, (where it still grows); Mr. Rand. Near Harrow; Mr. DuBois; near Luton Hoe, Bedfordshire; Mr. T. Knowlton. *Dillenius*. Near Berkhamstead, Herts; Mr. Goodall. *Withering*. It supplies the place of the last species in every grove and thicket of Italy, though not found in Switzerland; and may be truly wild in the situations above mentioned, which are analogous to those where it abounds. There is only a bare supposition of its having escaped from gardens, though Ray says the Dutch gardeners obtained the roots from Italy.

Perennial. *April*.

Root tuberous, roundish. Habit like the last, but with rather broader, richer, and more hairy foliage. Flower very elegant, bright blue. *Pet.* about 12 to 16, spreading, lanceolate, bluntish. *Stalk* above the leafy involucre silky. The wooden cuts above indicated are truly excellent.

4. *A. ranunculoides*. Yellow Wood Anemone.

Flowers solitary, or in pairs. Petals five, elliptical. Seeds pointed, without tails. Involucre of three, somewhat stalked, deeply cut, leaves.

A. ranunculoides. *Linn. Sp. Pl.* 762. *Willd. v. 2.* 1282. *Fl. Br.* 582. *Engl. Bot. v. 21. t.* 1484. *Huds.* 237. *DeCand. Syst. v. 1.* 206. *Fl. Dan. t.* 140.

A. n. 1153. *Hall. Hist. v. 2.* 64.

A. nemorum lutea. *Ger. Em.* 383. *f. Raii Hist. v. 1.* 625.

Ranunculus sylvestris luteus. *Trag. Hist.* 95. *f. with 3 flowers.*

R. nemorosus luteus. *Bauh. Pin.* 178. *Lob. Ic.* 674. *f.*

Ranunculi tertia species. *Cord. Hist.* 120, with the cut of *Tragus*.

R. quarta species lutea. *Fuchs. Hist.* 162. *f.*

In groves, very rare.

Near King's Langley, Herts; and Wrotham, Kent. *Hudson*. Near Abbot's Langley. *Mr. G. Anderson*.

Perennial. *April*.

Root and herbage much like *A. nemorosa*, but the radical leaves are few, often quinate. Involucral leaves 3, nearly sessile, ternate, or quinate. *Fl.* 1 or 2, I have never seen more, on hairy partial stalks. *Pet.* elliptical, obtuse, always bright yellow, and naturally 5, though the cut of Gerard and Lobel has 6, which sometimes happens to the wild plant, as *A. nemorosa* has occasionally 7. Seeds few, hairy, roundish, beaked.

This having never, as far as can be learned from old writers, been a garden plant in England, cannot safely be asserted to have escaped from gardens. I have wild specimens from the excellent author of the *Flora Anglica*, and from the late Mr. G. Ander-

son; two men whose accuracy and judgment are as unimpeachable as their honesty.

276. CLEMATIS. Traveller's Joy.

Linn. Gen. 280. *Juss.* 232. *Fl. Br.* 583. *Lam. t.* 497. *Gærtn. t.* 74.

DeCand. Syst. v. 1. 131.

Clematitis. Tourn. t. 150.

Nat. Ord. see *n.* 270—273, and 275—282.

Cal. none. *Pet.* from 4 to 8, inferior, regular, oblong, in the bud either valvular, or folded in at the edges. *Filam.* numerous, swelling upward. *Anth.* terminal, of 2 oblong lobes, bursting laterally. *Germ.* superior, sessile, ovate, collected into a round head. *Styles* terminal, much longer than the germen. *Stigmas* simple. *Seeds* numerous, ovate, compressed, placed on a capitate receptacle, and tipped with the permanent styles, becoming, generally feathery, *tails*.

Roots fibrous. *Stems* shrubby and climbing; rarely herbaceous or erect. *Leaves* opposite, for the most part repeatedly compound, with twining *footstalks*. *Fl.* paniced, terminal or axillary, rarely solitary, sometimes bracteate; cream-coloured, white, yellowish, or purple; in some species fragrant.

Notwithstanding the utmost dissimilarity of habit, the most attentive botanists have found great difficulty in establishing a clear generic distinction between this genus and *Anemone*. I acknowledge myself obliged to the excellent M. DeCandolle for pointing out the difference of their æstivation; see *Grammar* 22.

1. *C. Vitalba*. Common Traveller's Joy.

Leaves pinnate; leaflets heart-shaped, partly cut. Footstalks twining, permanent. Panicles forked, not longer than the leaves.

C. Vitalba. *Linn. Sp. Pl.* 766. *Willd. v.* 2. 1292. *Fl. Br.* 583. *Engl. Bot. v.* 9. *t.* 612. *Curt. Lond. fasc.* 4. *t.* 37. *Hook. Scot.* 171. *DeCand. Syst. v.* 1. 139. *Jacq. Austr. t.* 308. *Bull. Fr. t.* 89. *Ehrh. Pl. Off.* 346.

C. n. 1142. *Hall. Hist. v.* 2. 59.

C. latifolia, seu *Atragene quibusdam*. *Raii Syn.* 258. *Bauh. Hist. v.* 2. 125. *f. f.*

C. altera. *Matth. Valgr. v.* 2. 306. *f.*

C. tertia. *Camer. Epit.* 697. *f.*

Viorna. *Ger. Em.* 886. *f.* *Lob. Ic.* 626. *f.*

Vitis nigra. *Fuchs. Hist.* 97. *f.* *Ic.* 53. *f.*

Vitalba. *Dod. Pempt.* 404. *f.*

In hedges, especially on a calcareous soil.

Shrub. *July*.

Stems woody, angular, climbing to a great extent, or pendulous from broken precipices or old walls, branched, entangled, supported on other shrubs by their permanent, hardened, twining *footstalks*. *Leaves* deciduous; their *leaflets* 5, stalked, heart-shaped, pointed, finely hairy, either quite entire, unequally cut, or coarsely serrated. *Panicles* axillary and terminal, forked, many-flowered, downy. *Fl.* white, with a sweet almond-like scent. *Pet.* 4, most downy at the outside. *Seeds* with long, wavy, feathery and silky tails, forming beautiful tufts, conspicuous in wet weather. They retain their vegetative principle for many years, if kept dry.

277. THALICTRUM. Meadow-rue.

Linn. Gen. 280. *Juss.* 232. *Fl. Br.* 583. *Tourn. t.* 143. *Lam. t.* 497. *Gærtn. t.* 74. *DeCand. Syst. v.* 1. 168.

Nat. Ord. See *n.* 270—273, and 275—282.

Cal. none. *Pet.* 4 or 5, inferior, roundish, obtuse, concave, imbricated in the bud, deciduous. *Filam.* numerous, capillary, somewhat thickened at the upper part, various in length. *Anth.* terminal, oblong, drooping, bursting at the edges. *Germ.* several, superior, ovate, striated. *Styles* none. *Stigmas* oblique, ovate, tumid, downy. *Seeds* as many as the germens, ovate, furrowed, or winged, without any terminal appendage.

Perennial herbs, somewhat fetid and acrid. *Roots* fibrous, or partly fleshy, often yellow. *Leaves*, except in one Indian species, repeatedly compound, generally very smooth; *leaflets* lobed, or notched, variable. *Fl.* panicled, drooping or erect, whitish, or pale yellow, not splendid. The *stamens* and *pistils* vary with respect to number in some species, and the former are singularly dilated in *T. petaloideum*, of which *stamineum* proves, by the Linnæan herbarium, to be scarcely a variety. Some American ones are dioecious. A few have 5 petals.

1. *T. alpinum*. Alpine Meadow-rue.

Stem perfectly simple and almost naked, with a simple terminal cluster.

T. alpinum. *Linn. Sp. Pl.* 767. *Willd. v.* 2. 1295. *Fl. Br.* 584. *Engl. Bot. v.* 4. *t.* 262. *Lightf.* 286. *t.* 13. *f.* 1. *Dicks. H. Sicc.*

fasc. 18. 6. *Hook. Scot.* 171. *Winch Guide*, v. 1. 52. *Fl. Dan.* t. 11. *DeCand. Syst.* v. 1. 175.

T. minimum montanum atro-rubens, foliis splendentibus. *Raii Syn.* 204. *Boerh. Ind. Alt.* v. 1. 44. t. 1.

T. montanum minimum præcox, foliis splendentibus. *Moris.* v. 3. 325. *sect.* 9. t. 20. f. 14.

In elevated moist alpine pastures.

On most of the highest mountains in Wales and Scotland. Sent from Durham by the Rev. Mr. Harriman. Mr. Winch mentions it as growing "near Caldron Snout, by the path leading from thence to Widdy Bank," in that county; as also upon Cronkley Fell.

Perennial. *June*.

Root of a few long cylindrical fibres. *Herb* quite smooth, from 3 to 6 inches high. *Leaves* chiefly radical, on long, slender, upright *footstalks*, twice ternate, and somewhat pinnate, their little wedge-shaped veiny *leaflets* convex, dark green, and shining above; glaucous and concave beneath. *Stipulas* oblong, membranous, united to the base of the footstalks at each side. *Fl.* drooping when fully expanded. *Bractees* small, solitary under each partial stalk. *Pet.* 4, whitish, acute. *Stam.* 8 or 10, capillary. *Anth.* oblong, tawny. *Germ.* seldom more than 4. *Seeds* smooth, and nearly even.

Haller under his *n.* 1140, *T. fœtidum*, mentions this as a probable variety of that species, found in Switzerland. But if he had seen our plant, he could never have confounded it with any variety of *fœtidum*; nor did the Swiss botanists, with whom I have communicated, ever meet with the *alpinum*.

2. *T. minus*. Lesser Meadow-rue.

Leaves doubly pinnate; leaflets ternate, three-cleft, glaucous on both sides. Flowers paniced, pendulous. Stem zigzag. *Stipulas* rounded.

T. minus. *Linn. Sp. Pl.* 769. *Willd.* v. 2. 1297. *Fl. Br.* 584. *Engl. Bot.* v. 1. t. 11. *Raii Syn.* 203. *Ger. Em.* 1251. f. *Hook. Scot.* 172. *DeCand. Syst.* v. 1. 178. *Dod. Pempt.* 58. f. *Fl. Dan.* t. 732. *Jacq. Austr.* t. 419.

T. n. 1139. *Hall. Hist.* v. 2. 57.

T. Cordi tenuifolium. *Lob. Ic.* v. 2. 56. f.

β. *T. montanum minus*, foliis latioribus. *Raii Syn.* 204.

In chalky pastures, especially such as are rather mountainous; or in shell sand on the sea coast.

Perennial. *June, July*.

Root creeping. *Stem* from 4 to 12 inches high, branched, leafy, glaucous, smooth, somewhat angular, more or less zigzag in the lower part, often remarkably so. *Leaves* doubly pinnate, then ternate; *leaflets* various in figure and size; broadly heart-shaped, as

42 POLYANDRIA—POLYGYNIA. *Thalictrum*.

in variety β , or wedge-shaped as in *Engl. Bot.*; glaucous on both sides, smooth, notched or lobed in the fore part. *Footstalks* angular, smooth; the common one short, broad, channelled above, strongly furrowed beneath. *Stipulas* interior, simple, clasping the stem, short, broad, rounded, glaucous, purplish, jagged or fringed at the edge. *Panicles* compound, spreading, accompanied at the base by a few ternate, or slightly pinnate, leaves. *Bracteas* few, small, lanceolate. *Fl.* drooping, or pendulous, on slender stalks. *Pet.* 4, pale purple, with white edges. *Seeds* furrowed.

Such is our British plant. The Swedish specimens of Linnæus are much larger, like those of Villars from Dauphiny; but both answer to the above characters, especially in the *stipulas*. I have not seen the ripe *seeds*, which, according to DeCandolle, are acute at both ends.

3. *T. majus*. Greater Meadow-rue.

Leaves triply pinnate; leaflets ternate, lobed, glaucous beneath. Branches of the panicle aggregate, somewhat umbellate. Flowers drooping. *Stipulas* crescent-shaped, notched.

T. majus. *Crantz. Austr. fasc.* 2. 80. *Jacq. Austr. t.* 420. *Murr. Syst. Veg. Linn. ed.* 14. 513. *Willd. Sp. Pl. v.* 2. 1297. *Fl. Br.* 585. *Engl. Bot. v.* 9. *t.* 611. *DeCand. Syst. v.* 1. 179. *Ger. Em.* 1251. *f.*

T. magnum. *Dod. Pempt.* 58. *f.*

Ruta pratensis herbariorum. *Lob. Ic. v.* 2. 56. *f.*

On bushy hills in the north of England.

At Baydales, near Darlington; also on the margin of Ulswater, Cumberland. *Mr. Robson*.

Perennial. *June, July*.

Twice or thrice the size of the last. *Leaflets* of a dark shining green on the upper side; glaucous beneath only; the larger ones often an inch broad. *Stem* 3 feet high, or more, purplish, angular in the upper part. Lower branches of the *panicle* 2 or 3 together; uppermost either umbellate or alternate. *Fl.* on long stalks, drooping. *Pet.* 4, purplish green. *Anth.* yellow, quite pendulous. *Seeds* obliquely elliptical, furrowed. The wooden cut of the old authors above quoted, the same in all, certainly belongs to this species, and not to the following. The character of the *panicle*, and its difference from *T. minus*, are there well expressed, nor can these species be confounded.

4. *T. flavum*. Common Meadow-rue.

Stem erect, furrowed, leafy. Leaves doubly pinnate; partly three-lobed. Panicle compound, close, corymbose. Flowers and stamens erect.

T. flavum. Linn. *Sp. Pl.* 770. Willd. *v.* 2. 1300. *Fl. Br.* 585. *Engl. Bot.* *v.* 6. *t.* 367. Hook. *Scot.* 172. DeCand. *Syst.* *v.* 1. 182. *Fl. Dan.* *t.* 939. Ehrh. *Pl. Off.* 356.

T. nigricans. Jacq. *Austr.* *t.* 421. DeCand. *Syst.* *v.* 1. 182.

T. n. 1138. Hall. *Hist.* *v.* 2. 57; *excl. the syn. of Dodonæus.*

T. seu Thalictrum majus. Raii *Syn.* 203; *but not of Gerarde.*

T. nigrius, caule et semine striato. Bauh. *Hist.* *v.* 3. *p.* 2. 486. *f.*

β . *T. majus, foliis rugosis trifidis*. Moris. *v.* 3. 324. *sect.* 9. *t.* 20. *f.* 3.

In wet meadows, and about the banks of rivers and ditches, common.

Perennial. June, July.

Root fibrous, yellow. Stem 3 or 4 feet high, erect, straight, branched, leafy, hollow, deeply furrowed and angular, smooth. Leaves doubly pinnate; ultimately ternate, with general and partial membranous rounded *stipulas*; *leaflets* smooth, veiny; deep grassy green, or slightly glaucous, above; paler beneath; their breadth various, as is common in this genus; the upper ones sometimes linear, which characterizes *T. nigricans* of Jacquin; sometimes narrow, but more universally three-cleft, which is the variety β ; the broader ones are rounded, or heart-shaped, at the base. Panicle dense, of innumerable upright flowers, the copious yellow anthers being likewise erect. Pet. 4, cream-coloured. Seeds 6 or 8, very deeply furrowed.

An acrid herb, raising blisters on the skin; but cattle frequently feed upon it, as on the Crowfoot tribe, mixed with grass.

278. ADONIS. Pheasant's-eye.

Linn. *Gen.* 281. Juss. 232. *Fl. Br.* 586. Dill. *Gen.* 109. *t.* 4.

Lam. *t.* 498. Gært. *t.* 74. DeCand. *Syst.* *v.* 1. 220.

Nat. Ord. see *n.* 270—273, and 275—282.

Cal. inferior, of 5, converging, obtuse, concave, somewhat coloured, deciduous leaves. *Pet.* 5 to 15, oblong, obtuse, shining, with simple claws, destitute of nectaries. *Filam.* numerous, awl-shaped, very short. *Anth.* terminal, inflexed, of 2 round lobes. *Germ.* superior, very numerous, in a round head, incurved. *Styles* none. *Stigmas* acute, spreading. *Seeds* numerous, gibbous, angular, acute, without any appendage. *Recept.* cylindrical.

Herbs, annual or perennial. Leaves on the stem, in very numerous narrow segments. *Fl.* solitary, at the end of each branch, scarlet or yellow, very brilliant.

1. *A. autumnalis*. Corn Pheasant's-eye, or Adonis-flower.

Petals about eight, inversely heart-shaped. Fruit ovate. Stem branched.

44 POLYANDRIA—POLYGYNIA. Ranunculus.

A. autumnalis. Linn. *Sp. Pl.* 771. Willd. v. 2. 1304. *Fl. Br.* 586. *Engl. Bot.* v. 5. t. 308. With. 503. Curt. *Lond. fasc.* 2. t. 37. *Wade Dubl.* 147. Hook. *Scot.* 172.

A. æstivalis. With. 503.

A. n. 1158 β . Hall. *Hist.* v. 2. 66 ; by Swiss specimens ; syn. much confused.

Adonis. Camer. *Epit.* 647. f. Pet. *H. Brit.* t. 39. f. 8.

Flos Adonis. Raii *Syn.* 251. Clus. *Hist.* v. 1. 336. f. Lob. *Ic.* 283. f.

F. Adonis, flore rubro. Park. *Parad.* 293. t. 291. f. 5. Ger. *Em.* 387. f.

In corn-fields, but not common.

About London. Huds. and Curtis. Near Denver sluice, Norfolk.

Mrs. Plestow. Gloucestershire. Miss Lysons. About Dublin.

Dr. Wade. Occasionally about Glasgow. Mr. Hopkirk.

Annual. May—October.

Root tapering. *Stem* erect, branched, often bushy, round, striated, leafy, rarely a little downy. *Leaves* dark green, alternate, sessile, triply and copiously pinnatifid, with linear, acute, smooth segments. *Fl.* of a deep shining crimson, with a black spot near the claw of each *petal*, and dark-violet *anthers*. *Seeds* corrugated, composing an oblong-ovate head, not an inch long. The *petals* vary in number from 6 to 10, but are inversely heart-shaped, scarcely longer than the *calyx*, which is usually smooth.

A. æstivalis of Linnæus, under which the *miniata*, and perhaps *flammea*, of Jacquin, *Fl. Austr.* t. 354, 355, may be ranged, is a very distinct species, known by its mostly 5, narrow, scarlet *petals* ; long and slender spike of *seeds* ; and less bushy habit. This has never been found in England ; for specimens sent by my late worthy friend Dr. Withering show his *æstivalis* to be but a starved and paler *autumnalis*.

279. RANUNCULUS. Crowfoot.

Linn. *Gen.* 281. Juss. 233. *Fl. Br.* 587. Sm. in Rees's *Cycl.* v. 29. *Tourn.* t. 149, A—C, G—L. Lam. t. 498. Gartn. t. 74. DeCand. *Syst.* v. 1. 231.

Ficaria. Dill. *Gen.* 108. t. 5. Huds. 244. Juss. 233. DeCand. *Syst.* v. 1. 304.

Nat. Ord. see n. 270—273, and 275—282.

Cal. inferior, of 5, rarely fewer, ovate, concave, somewhat coloured, deciduous leaves. *Pet.* 5, rarely 8 or 10, obtuse, polished, with short broad claws. *Nect.* a pore towards the base of each *petal*, in several instances covered by a scale. *Filam.* numerous, rarely but 5, not half the length of the *petals*. *Anth.* roundish, linear, or heart-shaped, terminal, erect, of 2 cells, bursting at the outer edges. *Germ.* superior, numerous, collected into a head.

Styles none. *Stigmas* small, reflexed. *Seeds* numerous, ovate, compressed, either smooth, striated, tuberculated, or prickly, each tipped with a point, or hook.

Herbs, mostly perennial, either hairy or smooth. *Roots* fibrous, tuberous, or granulated. *Stems* round. *Leaves* extremely various. *Fl.* yellow, or white, very rarely purplish, on terminal, axillary, or lateral stalks, almost entirely scentless. In *R. auricomus* the *corolla* is often wanting, the *calyx* becoming dilated and coloured. In *Ficaria*, reckoned a distinct genus by some authors, the *calyx-leaves* are usually but 3, though often 5, and the *petals* about 8. The *nectaries* make it a *Ranunculus*, according to Linnæus, who had well considered the matter, and would not divide so natural a genus, especially for the sake of a solitary species. This whole natural order evinces the importance of its various and very curious *nectaries*, in characterizing the genera. Species of *Ranunculus* are found all over the world. They amount to 140 in DeCandolle, whose account of them is the last and best. Their qualities are hot and acrid.

* *Leaves simple.*

1. *R. Flammula*. Lesser Spear-wort Crowfoot.

Leaves ovate-lanceolate, bluntish, stalked. Stem reclining. Root fibrous. Seeds smooth.

R. Flammula. Linn. *Sp. Pl.* 772. Willd. *v.* 2. 1307. *Fl. Br.* 587. *Engl. Bot. v.* 6. *t.* 387. *Curt. Lond. fasc.* 6. *t.* 37. *Hook. Scot.* 174. *DeCand. Syst. v.* 1. 247. *Fl. Dan. t.* 575. *Dod. Pempt.* 432. *f. Bull. Fr. t.* 15. *Ehrh. Pl. Off.* 366.

R. n. 1182. *Hall. Hist. v.* 2. 78.

R. flammeus minor. *Raii Syn.* 250. *Ger. Em.* 961. *f.*

R. longifolius, aliis *Flammula*. *Bauh. Hist. v.* 3. 848. *f.*

R. species duodecima. *Cord. Hist.* 121, 2. *f.*

β. *R. flammeus serratus*. *Ger. Em.* 962. *f.*

R. Flammula, folio serrato. *Dod. Pempt.* 432. *f.*

R. aquatilis angustifolius serratus. *Lob. Ic.* 670. *f.*

γ. *R. flammeus*, latiori plantaginis folio, marginibus pilosis, ex *Hibernia*. *Pluk. Almag.* 312. *Dill. in Raii Syn.* 251.

δ. *R. reptans*. Linn. *Sp. Pl.* 773. Willd. *v.* 2. 1307. *DeCand. Syst. v.* 1. 248. *Lightf.* 289. *f. in title.* *Dicks. H. Sicc. fasc.* 6. 10. *Fl. Dan. t.* 108.

R. n. 1183. *Hall. Hist. v.* 2. 79.

R. repens, gramineis foliis, e singulis geniculis radices agens. *Amm. Ruth.* 80. *t.* 13. *f.* 1.

46 POLYANDRIA—POLYGYNIA. *Ranunculus*.

In watery places, common.

♂. On the margins of alpine lakes.

Perennial. *June—September*.

Roots of many long simple fibres, partly from the lower joints of the stem. *Herb* generally smooth; except the variety γ , whose leaves are said to be hairy at the edges. This I have never met with. *Stem* more or less reclining, partly, or entirely, decumbent, from 6 to 18 inches long, branched, leafy, hollow; DeCandolle says "solid;" it is often hairy in the upper part. *Leaves* on channelled clasping footstalks, alternate, lanceolate, varying greatly in breadth, sometimes ovate, sometimes in δ partly linear; in β remarkably serrated, but the least observation proves this a mere variety, and most authors have had doubts concerning δ . I cannot esteem it a species. *Fl.* opposite to the leaves, as well as terminal, on round stalks, without *bracteas*. *Pet.* of a golden yellow. *Nect.* minute. *Seeds* small, smooth at the sides. *Calyx* often slightly hairy. The whole plant is highly acrid, blistering the skin. Dr. Withering recommends the distilled water as an instantaneous emetic, in cases of poison. He does not mention the dose.

2. *R. Lingua*. Great Spear-wort Crowfoot.

Leaves lanceolate, pointed, nearly sessile, somewhat serrated. Stem erect, many-flowered. Root fibrous. Seeds smooth.

R. Lingua. *Linn Sp. Pl.* 773. *Willd. v. 2.* 1308. *Fl. Br.* 588. *Engl. Bot. v. 2, t. 100.* *Hook. Scot.* 173. *Lond. t. 171**. *DeCand. Syst. v. 1.* 246. *Fl. Dan. t.* 755.

R. n. 1181. *Hall. Hist. v. 2.* 78.

R. flammeus major. *Raii Syn.* 250. *Ger. Em.* 961. *f.*

R. longo folio maximus, *Lingua Plinii*. *Bauh. Hist. v. 3.* 849. *f.*

R. longifolius, *Lingua Plinii dictus*, *foliis serratis*. *Ambros. Phyt.* 459. *f.*

In marshes, reedy pools and ditches, but not common.

In the isle of Ely, Norfolk, and several parts of the north of England; also in Duddingston loch, near Edinburgh.

Perennial. *July*.

Twice the size of *R. Flammula*, and more silky, with close-pressed hairs, in every part of the herbage. The *leaves* are more generally, but not so evidently, serrated. *Cal.* hairy. *Pet.* bright yellow. *Nect.* covered by a small scale. *Seeds* minutely dotted, but not rough.

3. *R. gramineus*. Grassy Crowfoot.

Leaves linear-lanceolate, many-ribbed, entire. Stem erect, very smooth, with few flowers. Root tuberous.

R. gramineus. *Linn. Sp. Pl.* 773. *Willd. v. 2.* 1309. *With.* 505.

POLYANDRIA—POLYGYNIA. *Ranunculus*. 47

Fl. Br. 588. *Engl. Bot.* v. 33. t. 2306. *Curt. Mag.* t. 164. *DeCand. Syst.* v. 1. 245. *Bull. Fr.* t. 123.

R. pumilus, gramineis foliis. *Lob. Ic.* 671. f. *Bauh. Hist.* v. 3. 850. f.

In dry alpine pastures in Wales.

Brought from North Wales by Mr. Pritchard. *Withering*.

Perennial. *May, June*.

Root tuberous, with several thick fleshy fibres, and crowned with the thready remains of old leaves. Stem about a foot high, round, smooth, erect, bearing from 1 to 3 or 4 bright-yellow, rather large, flowers, and a few small sessile leaves. Most of the leaves are radical, on short sheathing stalks, grassy, linear, acute, glaucous, numerously ribbed. *Cal.* quite smooth, spreading, not deflexed. *Nect.* a tubular scale. Botanists have confounded with this several synonyms belonging to *R. pyrenæus* of Linnæus; and those of Bauhin and Dalechamp in *Fl. Brit.* must be expunged. The error is corrected in Rees's *Cycl.* at n. 7 and 8.

4. *R. Ficaria*. Pilewort Crowfoot. Lesser Celandine.

Leaves heart-shaped, angular, stalked, smooth. Petals numerous, elliptic-oblong.

R. Ficaria. *Linn. Sp. Pl.* 774. *Willd.* v. 2. 1312. *Fl. Br.* 589.

Engl. Bot. v. 9. t. 584. *Curt. Lond. fasc.* 2. t. 39. *Mart. Rust.* t. 21.

Hook. Scot. 174. *Fl. Dan.* t. 499. *Bull. Fr.* t. 43. *Ehrh. Pl. Off.* 376.

Ficaria. *Brunf. Herb.* v. 1. 215. f.

F. n. 1160. *Hall. Hist.* v. 2. 67.

F. verna. *Huds.* 244.

F. ranunculoides. *Roth Germ.* v. 1. 241. v. 2. p. 1. 622. *DeCand. Syst.* v. 1. 304.

Chelidonium minus. *Raii Syn.* 246. *Ger. Em.* 816. f. *Trag. Hist.*

113. f. *Fuchs. Hist.* 867. f. *Matth. Valgr.* v. 1. 578. f. *Camer.*

Epit. 403. f. *Dalech. Hist.* 1048. f. *Cord. Hist.* 121, 2. f.

In meadows, bushy places, and about hedge banks, every where.

Perennial. *April*.

Root fibrous, accompanied with many fleshy, oblong, annual knobs.

Herb smooth, of a bright shining green, rather succulent. *Stems* either erect or recumbent, from 3 to 10 inches long, branched, leafy. *Leaves* alternate, stalked, heart-shaped, angular or wavy at the margin, sometimes spotted with black. *Footstalks* longer than the leaves; dilated, membranous and sheathing at the base. *Fl.* terminal, solitary, on long stalks. *Cal.* of 3, rarely more, roundish, concave leaves. *Pet.* elliptic-oblong, generally 9, often 8 or 10, of a golden yellow, as if varnished; turning white by the action of light. *Nect.* a small hollow in the base of each petal, closed with a scale.

Those who retain *Ficaria* as a genus, should observe that Hudson's name *verna*, published in 1762, is prior to *ranunculoides*, and in every respect more eligible; the latter being a barbarous jumble of Latin and Greek, such as too often disgraces our science. It ought to have been *ranunculinus*.

** *Leaves lobed, or cut.*

5. *R. auricomus*. Wood Crowfoot. Goldilocks.

Radical leaves kidney-shaped, deeply three-cleft, notched; stem-leaves divided to the base into linear segments. Stem many-flowered. Calyx coloured.

R. auricomus. Linn. *Sp. Pl.* 775. Willd. *v.* 2. 1314. *Fl. Br.* 590. *Engl. Bot. v.* 9. *t.* 624. *Curt. Lond. fasc.* 2. *t.* 41. *Hook. Scot.* 174. *DeCand. Syst. v.* 1. 266. *Fl. Dan. t.* 665. *Ger. Em.* 954. *f.*

R. n. 1177. *Hall. Hist. v.* 2. 76.

R. nemorosus dulcis, secundus Tragi. *Raii Syn.* 248.

R. dulcis, seu pratensis. *Trag. Hist.* 97. *f.*

R. primaspecies sylvestris. *Fuchs. Hist.* 156. *f.* *Dalech. Hist.* 1029. *f.*

R. rotundifolius vernus sylvaticus. *Bauh. Hist. v.* 3. 841. *f.*

R. pratensis erectus dulcis. *Bauh. Pin.* 179. *Moris. v.* 2. 439. *t.* 28. *f.* 15.

In dry groves, bushy and shady places, not uncommon. Mr. Curtis justly remarks that it rarely occurs in marshy ground.

Perennial. *April, May.*

Root fibrous. *Stem* about a foot high, erect, branched, leafy, round, the upper part often slightly downy. *Leaves* seldom quite smooth; often finely downy; radical ones on long stalks, rounded or kidney-shaped, crenate, some of them 3-lobed, or 5-lobed, cut; those on the stem sessile, in deeper and narrower segments; uppermost in 3 or more linear, quite entire, lobes. *Fl.* terminal, stalked, solitary, of a bright golden yellow, of which the pale, hairy, never reflexed, *calyx* often partakes. Sometimes the part last mentioned is dilated and coloured, assuming the aspect of *petals*, which in that case are wanting. *Nect.* a naked pore.

This species, having no acrimony, has been termed *dulcis*, or Sweet Wood Crowfoot. The great and constant diversity of form in the *leaves*, especially the narrow linear shape of the upper ones, distinguish it readily.

6. *R. sceleratus*. Water Crowfoot. Celery-leaved Crowfoot.

Stem erect, hollow, much branched. Leaves smooth; lower ones palmate; upper fingered. Fruit oblong. Seeds very numerous, minute.

R. sceleratus. Linn. *Sp. Pl.* 776. Willd. *v.* 2. 1315. *Fl. Br.* 590. *Engl. Bot. v.* 10. *t.* 681. *Curt. Lond. fasc.* 2. *t.* 42. *Hook. Scot.* 174. *DeCand. Syst. v.* 1. 268. *Fl. Dan. t.* 571. *Bull. Fr. t.* 47. *Ehrh. Pl. Off.* 386.

R. n. 1175. *Hall. Hist. v.* 2. 74.

R. palustris. *Raii Syn.* 249. *Cord. Hist.* 119, 2. *f.*

R. palustris rotundifolius. *Ger. Em.* 962. *f.*

R. palustris, flore minimo. *Bauh. Hist. v. 3.* 846. *t.*

R. secunda species. *Fuchs. Hist.* 159. *f.*

R. primus. *Camer. Epit.* 380. *f.*

Apium aquaticum. *Trag. Hist.* 93. *f.*

Common in watery places.

Annual. *June—August.*

Root fibrous. *Herb* very acrid, juicy, various in luxuriance, from 6 inches to 2 feet high, of a pale shining green, very smooth, except occasionally the *flower-stalks* and upper part of the stem, which are now and then hairy. *Stem* thick, round, hollow, repeatedly branched, leafy. *Lower leaves* stalked, rounded, bluntly lobed and cut; *upper* sessile, with deeper and narrower segments; *uppermost* of all, accompanying the flowers, lanceolate, undivided. *Fl.* small, pale yellow, numerous, on solitary stalks, either terminal, axillary, or opposite to the leaves. *Cal.* hairy, reflexed. *Pet.* orbicular. *Nect.* somewhat tubular. *Fruit* cylindrical, obtuse, various in length, composed of numerous small seeds. The bruised herb is said to raise a blister, leaving a sore which is not easily healed, and by which strolling beggars sometimes excite compassion.

7. *R. alpestris*. Alpine White Crowfoot.

Leaves very smooth; radical ones somewhat heart-shaped, obtuse, in three deep lobed segments; those of the stem lanceolate, entire. Flower mostly solitary. Calyx smooth.

R. alpestris. *Linn. Sp. Pl.* 778. *Willd. v. 2.* 1322. *Engl. Bot. v. 34.* t. 2390. *Comp. ed.* 4. 97. *Tr. of Linn. Soc. v. 10.* 343. *Ait. Hort. Kew. ed. 2. v. 3.* 356. *Hook. Scot.* 173. *DeCand. Syst. v. 1.* 239. *Jacq. Austr. t.* 110.

R. n. 1167. *Hall. Hist. v. 2.* 71.

R. montani prima species. *Clus. Pann.* 364, 365. *f, f.* *Hist. v. 1.* 234. *f, f.*

R. montanus, flore minore, et flore majore. *Ger. Em.* 964. *f, f.*

R. minimus alpinus albus. *Bauh. Hist. v. 3.* 845; 2 lower *f.*

R. alpinus humilis albus, folio subrotundo. *Segu. Veron. v. 1.* 489. t. 12. *f.* 1.

By the sides of alpine rills in Scotland, rare.

In moist places, about two or three rocks, on the Clova mountains of Angusshire, rarely flowering. *Mr. G. Don.*

Perennial. *May.*

Root with many long fibres. *Herb* very smooth in every part. *Stem* from 2 to 5 inches high, erect, almost invariably simple and single-flowered, naked, except one or two linear, bluntish, upright, entire *leaves* towards the middle. *Radical leaves* several, on channelled stalks, roundish-heart-shaped, or kidney-shaped, more or less deeply divided into 3 principal unequal lobes,

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which are again lobed and cut, elegantly veiny. *Fl.* erect, of a brilliant white. *Cal.* reflexed, smooth, pale, bordered with white. Haller says this is one of the most acrid of its tribe, blistering the skin ; and yet alpine hunters chew it by way of refreshment, as removing fatigue, and preventing giddiness.

8. *R. bulbosus*. Bulbous Crowfoot. Butter-cups.

Calyx reflexed. Flower-stalks furrowed. Stem upright, many-flowered. Leaves compound. Root bulbous. Seeds smooth.

R. bulbosus. *Linn. Sp. Pl.* 778. *Willd. v. 2.* 1324. *Fl. Br.* 591. *Engl. Bot. v. 8. t. 515.* *Curt. Lond. fasc. 1. t. 38.* *Hook. Scot.* 175. *Mart. Rust. t. 28.* *Mill. Illustr. t. 51.* *Raii Syn.* 247. *Ger. Em.* 953. *f. Lob. Ic.* 667. *f. DeCand. Syst. v. 1.* 295. *Bull. Fr. t. 27.*

R. tuberosus. *Dod. Pempt.* 431. *f.*

R. tuberosus major. *Bauh. Hist. v. 3.* 417. *f.*

R. tertia species. *Fuchs. Hist.* 160. *f.*

Crus galli. *Brunf. Herb.* 145. *f.*

In pastures, meadows, grass-plats, and waste ground every where. Perennial. *May*.

Root a solid roundish bulb, fibrous underneath, proliferous at the top. *Stems* one or more, erect, a foot high, round, hairy, leafy, hollow ; alternately branched in the upper part ; simple and without offsets or runners below. *Lower leaves* on dilated, channelled, hairy stalks, compound in a ternate manner, as well as deeply three-cleft and cut, varying much in degree of hairiness ; upper ones alternate, sessile, more simple, with narrower segments. *Fl.* terminal, solitary, on simple, furrowed, hairy, upright stalks. *Calyx-leaves* ovate, concave, hairy, thin at the base, turned back close to the stalk soon after they expand. *Pet.* roundish with a terminal notch, concave, of a full golden yellow. *Nect.* covered by a heart-shaped scale. *Seeds* compressed, smooth at the sides.

This species is acrid, though commonly eaten, along with other herbage, by domestic cattle. It increases plentifully by seed, and is of slow growth, though of long duration. A double variety, figured by the old herbalists, is sometimes seen in gardens.

9. *R. hirsutus*. Pale Hairy Crowfoot.

Calyx reflexed, pointed. Stem upright, many-flowered, hairy. Leaves ternate. Root fibrous. Seeds tuberculated.

R. hirsutus. *Curt. Lond. fasc. 2. t. 40.* *Fl. Br.* 592. *Comp. ed.* 4. 97. *Engl. Bot. v. 21. t. 1504.* *Hook. Scot.* 175.

R. Philonotis. *Ehrh. Herb.* 116. *Beitr. v. 2.* 145. *Willd. v. 2.* 1324. *Retz. Obs. fasc. 6.* 31. *DeCand. Syst. v. 1.* 297.

R. bulbosus β . *Huds.* 241.

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R. rectus, foliis pallidioribus hirsutis. *Bauh. Hist.* v. 3. 417. *f. Raii Syn.* 247.

Pale Upright Crowfoot. *Pet. H. Brit.* t. 38. *f.* 5.

β. *Ranunculus parvulus*. *Linn. Mant.* 79. *Fl. Br.* 593.

R. parviflorus. *Gouan Fl. Monsp.* 270 ; from the author, but not of *Linn.*

R. arvensis parvus, folio trifido. *Bauh. Pin.* 179. *Magnol Monsp.* 217. *Moris.* v. 2. 439. *sect.* 4. t. 28. *f.* 20.

R. minimus saxatilis hirsutus. *Bauh. Prodr.* 96. *Pin.* 182.

R. minimus apulus. *Colum. Ecphr.* 314. t. 316. *f.* 1.

In moist meadows, and waste or cultivated ground that is liable to be overflowed, frequent.

Annual. *June—October.*

Root of many simple fibres. *Herb* very variable in luxuriance, of a paler hue than most of this genus, and clothed with fine, silky, spreading hairs. *Lower leaves* on long stalks, ternate, lobed and cut ; *upper* sessile, with 3, or more, narrower segments. *Flower-stalks* hairy, furrowed. *Cal.* pointed, finally reflexed close to the stalk, and clothed with hairs glandular at their base. *Pet.* of a golden yellow. *Nect.* covered with a scale. *Seeds* compressed, bordered, rough on both sides, especially towards the margin, with an irregular double or triple row of small sharp prominences, first observed by Mr. E. Forster. These clearly distinguish it from our other common Crowfoots, with which it has been confounded ; and likewise prove the *R. parvulus* of Linnæus and *Fl. Br.* to be but a starved variety of the same species.

10. *R. repens*. Creeping Crowfoot.

Calyx spreading. *Flower-stalks* furrowed. *Scyons* creeping. *Leaves* compound, cut ; the uppermost entire.

R. repens. *Linn. Sp. Pl.* 779. *Willd.* v. 2. 1325. *Fl. Br.* 592. *Engl. Bot.* v. 8. t. 516. *Curt. Lond. fasc.* 4. t. 38. *Mart. Rust.* t. 29. *Hook. Scot.* 175. *DeCand. Syst.* v. 1. 285. *Fl. Dan.* t. 795. *Bull. Fr.* t. 77.

R. n. 1173. *Hall. Hist.* v. 2. 73.

R. pratensis repens. *Raii Syn.* 247.

R. pratensis etiamque hortensis. *Ger. Em.* 951. *f.*

R. pratensis repens hirsutus. *Bauh. Pin.* 179. *Moris.* v. 2. 439. *sect.* 4. t. 28. *f.* 18.

Creeping and Thames Crowfoot. *Pet. H. Brit.* t. 38. *f.* 7, 8.

In meadows, moist pastures, and shady waste places in towns, neglected gardens, &c., very common.

Perennial. *June—August.*

Root slightly tuberous, with stout fibres ; sending forth from its crown long prostrate runners, which take root at every joint.

Stems erect or ascending, round, hairy, leafy, branching. *Leaves*

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dark green, hairy, twice ternate ; the upper ones with wedge-shaped, cut leaflets ; uppermost of all in 3 deep, lanceolate, acute, entire lobes. *Radical leaves* often marked with a black spot. *Fl.* bright yellow, like those of *R. bulbosus*, *hirsutus*, and others, but the hairy *calyx* is spreading, not reflexed. *Pet.* notched. *Nect.* covered with a notched scale. *Seeds* not generally perfected. A double variety is sometimes seen in gardens.

11. *R. acris*. Upright Meadow Crowfoot.

Calyx spreading. Flower-stalks round and even. Leaves in three deep lobed and cut segments ; those of the uppermost linear and entire. Stem erect, covered with close hairs.

R. acris. *Linn. Sp. Pl.* 779. *Willd. v. 2.* 1326. *Fl. Br.* 593. *Engl. Bot. v. 10. t.* 652. *Curt. Lond. fasc. 1. t.* 39. *Mart. Rust. t.* 30. *Woodv. suppl. t.* 246. *Hook. Scot.* 174. *DeCand. Syst. v. 1.* 277. *Bull. Fr. t.* 109. *Curt. Mag. t.* 215, *double fl.*

R. n. 1169. *Hall. Hist. v. 2.* 72.

R. pratensis erectus acris. *Bauh. Pin.* 178. *Raii Syn.* 248.

R. luteus. *Trag. Hist.* 94. *f.*

R. octavus. *Cord. Hist.* 120, 2. *f, f.*

R. hortensis secunda. *Dod. Pempt.* 426. *f.*

R. pratensis, surrectis cauliculis. *Lob. Ic.* 665. *f.*

Chrysanthemum. *Fuchs. Hist.* 879. *f.*

Pes corvinus. *Brunf. Herb. v. 1.* 143, 144. *f, f.*

Upright Meadow Crowfoot. *Pet. H. Brit. t.* 38. *f.* 3.

In meadows and pastures very common ; even on the loftiest mountains.

Perennial. *June, July.*

Root somewhat tuberous, with many long simple fibres. *Stem* 2 feet high, erect, round, hollow, leafy, clothed with close-pressed hairs, or bristles ; branched above, and many-flowered. *Radical leaves* on long upright hairy footstalks, in 3 or 5 deep lobes, which are variously subdivided and cut, more or less hairy ; *stem-leaves* nearly sessile, with fewer and narrower segments ; *uppermost* much smaller, in 3 linear entire lobes ; or sometimes simple and linear. *Fl.* bright yellow, on round even stalks, covered with close hairs, and not furrowed. *Cal.* hairy, spreading, deciduous. *Nect.* covered by a scale. *Seeds* lenticular, smooth, with a small, slightly curved, point.

The small variety, with scarcely more than a solitary flower, found on the Highland mountains, and brought by Mr. D. Turner from wet rocks near the summit of Snowdon, is not the *montanus* of Willdenow, but becomes, with one year's culture in a garden, precisely our common *acris*. It has remained so with me above 20 years. The double-flowered variety is common in gardens, and not inelegant. The synonym of Gerarde, quoted

in *Fl. Br.* belongs to *R. polyanthemos*, a foreign species, with furrowed *flower-stalks*, and more finely divided *leaves*, of which the wooden cuts, in old books, are, as Prof. DeCandolle well observes, hard to distinguish from those of the *acris*.

12. *R. arvensis*. Corn Crowfoot.

Seeds very prickly at the sides. Leaves once or twice deeply three-cleft, with linear-lanceolate segments. Stem erect, much branched, many-flowered.

R. arvensis. *Linn. Sp. Pl.* 780. *Willd. v. 2.* 1329. *Fl. Br.* 594. *Engl. Bot. v. 2. t.* 135. *Curt. Lond. fasc. 6. t.* 36. *Mart. Rust. t.* 56. *Hook. Scot.* 175. *DeCand. Syst. v. 1.* 297. *Fl. Dan. t.* 219. *Brugnon Mem. de l'Acad. de Turin, v. 4.* 108. *t. 3. Cord. Hist.* 120. *f.*

R. n. 1176. *Hall. Hist. v. 2.* 75.

R. arvorum. *Raii Syn.* 248. *Ger. Em.* 951. *f.* *Lob. Ic.* 665. *f.*

R. hortensis simplicis, prima species. *Fuchs. Hist.* 157. *f.* *Dalech. Hist.* 1030. *f.*

Corn Crowfoot. *Pet. H. Brit. t.* 38. *f.* 10.

In corn-fields, not uncommon.

Annual. *June*.

Root fibrous. *Herb* of a pale shining green, nearly, but not quite, smooth. *Stem* erect, in a favourable soil much branched, round, leafy. *Leaves* alternate, the upper ones partly opposite, all once or twice divided in a three-fold manner, with linear-lanceolate, bluntish, mostly entire, rather fleshy segments. *Fl.* small, lemon-coloured, solitary, on simple stalks opposite to the leaves. *Cal.* spreading, narrow, hairy. *Pet.* obovate. *Seeds* large, each with an upright awl-shaped point, their flat sides densely armed with numerous, sharp, prominent prickles.

Very acrid and dangerous to cattle, though they are said to eat it greedily. M. Brugnon, who has given a particular account of its qualities, relates that 3 ounces of the juice killed a dog in 4 minutes. Several sheep were killed by feeding on this herb near Turin, which first led to an investigation of the matter. Cholic, with inflammation of the stomach, were the symptoms, which were best removed by pouring vinegar down the animals' throats. Hence, like most vegetable poisons, this Crowfoot seems to act on the nerves, and yet black spots were found in the sheep's stomachs.

13. *R. parviflorus*. Small-flowered Crowfoot.

Seeds armed at the sides with hooked prickles. Leaves simple, hairy, sharply cut; upper ones three-lobed. Stem prostrate.

R. parviflorus. *Linn. Sp. Pl.* 780. *Willd. v. 2.* 1329. *Fl. Br.* 594. *Engl. Bot. v. 2. t.* 120. *DeCand. Syst. v. 1.* 300. *Fl. Dan. t.* 1218.

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R. hirsutus annuus, flore minimo. *Raii Syn.* 248. *t.* 12. *f.* 1. *Pluk. Almag.* 311. *Phyt. t.* 55. *f.* 1.

R. arvensis annuus hirsutus, flore omnium minimo luteo. *Moris. v.* 2. 440. *sect.* 4. *t.* 28. *f.* 21.

Ray's Hairy Crowfoot. *Pet. H. Brit. t.* 38. *f.* 9.

In gravelly fields, and under hedges.

In several places about London. *Ray.* On Malvern hill, Worcestershire ; Mr. Ballard ; and in the south-west part of England.

With. Near Norwich. *Mr. Pitchford.* On hedge banks out of St. Stephen's and St. Giles's gates, Norwich. [At Sandgate, Kent.]

Annual. *May, June.*

Root fibrous. *Herb* pale green, more or less hairy. *Stems* prostrate, round, hollow, branched, leafy, about a span long. *Leaves* stalked, roundish-heart-shaped, acutely notched ; the upper ones three-lobed ; uppermost of all in deep lanceolate entire segments. *Fl.* opposite to the leaves, solitary, stalked, small, yellow, with narrow obovate *petals*, one or more of which are often wanting, or imperfect. *Seeds* lenticular, with a broad, compressed, curved point ; their sides densely covered with small, hooked, prominent prickles.

14. *R. hederaceus*. Ivy Crowfoot.

Seeds wrinkled. Leaves roundish-kidney-shaped, with three or five lobes, entire, smooth. Stem creeping.

R. hederaceus. *Linn. Sp. Pl.* 781. *Willd. v.* 2. 1331. *Fl. Br.* 595. *Engl. Bot. v.* 28. *t.* 2003. *Curt. Lond. fasc.* 4. *t.* 39. *Hook. Scot.* 173. *DeCand. Syst. v.* 1. 233. *Fl. Dan. t.* 321. *Dalech. Hist.* 1031. *f.* *Bauh. Hist. v.* 3. 774. *f.*

R. aquatilis hederaceus albus. *Raii Syn.* 249.

Ivy Crowfoot. *Pet. H. Brit. t.* 38. *f.* 12.

In shallow rivulets, ditches, and pools.

Perennial. *May--August.*

A little, smooth, branching, creeping or floating herb, sending down radicles from each joint of its hollow leafy *stem*. *Leaves* stalked, opposite or alternate, with 3 or 5 shallow lobes ; their colour dark green, often with a black spot on the disk. *Fl.* small, with narrow white *petals*, and from 5 to 10 or 12 *stamens*. *Seeds* tumid, with minute transverse wrinkles.

15. *R. aquatilis*. White Floating Crowfoot.

Seeds wrinkled. Leaves in capillary segments under water ; above somewhat peltate, lobed, bluntly notched.

R. aquatilis. *Linn. Sp. Pl.* 781. *Willd. v.* 2. 1332. *Fl. Br.* 596. *Engl. Bot. v.* 2. *t.* 101. *Hook. Scot.* 173. *Ger. Em.* 829. *f.* *Raii Syn.* 249. *DeCand. Syst. v.* 1. 234. *Dod. Pempt.* 587. *f.*

- R. n.* 1163. *Hall. Hist. v. 2.* 69.
R. aquatilis albus. Bauh. Hist. v. 3. 773. *f.*
R. aquatilis albus, lato et fœniculi folio. Barrel. Ic. t. 565.
R. aquaticus, hepaticæ facie. Lob. Ic. v. 2. 35. *f.*
R. heterophyllus. Wiggers Holsat. 42. *Sibth.* 175. *Abbot* 123.
Purt. v. 1. 263.
 Water Crowfoot with various leaves. *Pet. H. Brit. t.* 39. *f.* 1.
 β. *Ranunculus aquatilis omninò tenuifolius. Raii Syn.* 249.
Bauh. Hist. v. 3. 773. *f.*
R. aquatilis. Wigg. Holsat. 42. *Sibth.* 175.
R. trichophyllon aquaticus medio luteus. Column. Ecphr. 315.
t. 316.
R. aquaticus albus fœniculi folio. Barrel. Ic. t. 566.
R. n. 1162. *Hall. Hist. v. 2.* 69.
R. pantothrix. Brot. Lusit. v. 2. 375. *DeCand. Syst. v. 1.* 235, α.
Millefolium, sive Maratriphyllon, flore et semine Ranunculi aqua-
tici, hepaticæ facie. Ger. Em. 827. *f.*
 Fine Water Crowfoot. *Pet. H. Brit. t.* 39. *f.* 2.
 γ. *Ranunculus aquaticus albus, circinatis tenuissimè divisis foliis,*
floribus ex alis longis pediculis innixis. Raii Syn. 249. *Pluk.*
Almag. 311. *Phyt. t.* 55. *f.* 2.
R. circinatus. Sibth. 175.
R. pantothrix β. DeCand. Syst. v. 1. 236.
R. n. 1162 β. *Hall. Hist. v. 2.* 69.
 Fine trimmed Water Crowfoot. *Pet. H. Brit. t.* 39. *f.* 3.
 δ. *Ranunculo, sive Polyanthemo aquatili albo affine, Millefolium*
Maratriphyllon fluitans. Bauh. Hist. v. 3. 774. *f.* *Raii Syn.* 250.
Fl. Dan. t. 376.
Ranunculus fluviatilis. Wigg. Holsat. 42. *Sibth.* 176. *Abbot* 123.
Willd. v. 2. 1333.
R. pantothrix γ. DeCand. Syst. v. 1. 236.
R. n. 1161. *Hall. Hist. v. 2.* 68.
 Fennel Water Crowfoot. *Pet. H. Brit. t.* 39. *f.* 4.
Fœniculus aquaticus. Dalech. Hist. 1023. *f.*
 In ditches and ponds every where. δ in rivers.
 Perennial. *May, June.*
 The natural state of this species is when it mantles the surface of still pools or ditches with its lobed floating *leaves*, and abundance of white *flowers*, yellow in the middle, the branched *stems* throwing out long fibrous *roots* from their lower joints, and the *leaves* which are under water being repeatedly divided, in a threefold manner, into narrow, linear, acute segments. The *flowers* are solitary, on long stalks, opposite to the leaves. *Cal.* smooth, deciduous. *Pet.* obovate, twice as long as the calyx, with a tubular *nectary* in the middle of the yellow claw. *Seeds* numerous, in a round head, obovate, transversely wrinkled; more or less hairy, or minutely bristly, especially in the varieties. β has all the *leaves* cut as above mentioned, and im-

mersed in the water ; but any person who throws it out into a shallow puddle, early in the summer, will soon, I believe, see broad leaves produced. γ , from whatever cause, bears smaller, neater, rounded, very finely cut leaves. δ , floating in a strong or rapid stream, has all its leaves dissected and lengthened out by the water, and can but rarely flower. I agree with Prof. Hooker that the hairiness of the *seeds* is no constant mark ; for after having long ago thought it such, I have been obliged to give up that point. See Rees's *Cyclopædia*. I cannot but wonder at those otherwise able botanists, who seeing these varieties produced under their eyes, with the evident cause of each continually acting, can consider them as species.

R. fluviatilis of Dr. Bigelow in his *Boston Flora*, 139, is indeed a totally different species, of much larger dimensions, with all the *leaves* finely and copiously subdivided, bright yellow *flowers*, and minutely wrinkled *seeds*, terminating in compressed upright beaks, as long as themselves.

280. TROLLIUS. Globe-flower.

Linn. Gen. 282. *Juss.* 233. *Fl. Br.* 597. *Lam. t.* 499. *Gærtn. t.* 118. *DeCand. Syst. v.* 1. 311.

Nat. Ord. see *n.* 279.

Cal. none. *Pet.* several, inferior, uncertain in number, from 5 to 15, roundish, concave, converging, deciduous. *Nect.* from 5 to 10, or more, shorter than the petals, linear, flattened, incurved, with a single lip ; their base somewhat tubular. *Filam.* numerous, bristle-shaped, shorter than the corolla. *Anth.* terminal, linear, erect. *Germ.* superior, numerous, sessile, columnar. *Styles* none. *Stigmas* pointed, spreading, shorter than the stamens. *Caps.* (*follicles*,) as many as the germens, cylindrical, pointed, recurved, collected into a round head. *Seeds* several, at the edges of the capsule, ovate, smooth, somewhat triangular.

Smooth, perennial, upright *herbs*, natives of the colder parts of Europe and America. *Leaves* deeply divided and cut, alternate. *Fl.* terminal, solitary, more or less globular, large and handsome, yellow or orange-coloured.

1. *T. europæus*. Mountain Globe-flower.

Petals about fifteen, converging into a globe. Nectaries from five to ten, the length of the stamens.

T. europæus. *Linn. Sp. Pl.* 782. *Willd. v.* 2. 1333. *Fl. Br.* 597. *Engl. Bot. v.* 1. t. 28. *Hook. Scot.* 175. *DeCand. Syst. v.* 1. 312. *Fl. Dan. t.* 133.

T. n. 1189. *Hall. Hist. v. 2. 83.*

Ranunculus globosus. *Raii Syn. 272. Ger. Em. 955. f.*

R. flore globoso. *Dod. Pempt. 430. f. Dalech. Hist. 1033. f. Bauh. Hist. v. 3. 419. f. Robert Ic. t. 27.*

R. glomerato flore. *Clus. Hist. v. 1. 237. f.*

R. sextus. *Camer. Epit. 385. f.*

Globe Crowfoot. *Pet. H. Brit. t. 43. f. 2.*

In shady, mountainous, rather moist situations.

Not rare in Westmoreland, Cumberland, Durham, Wales, and the lowlands of Scotland.

Perennial. *May, June.*

Root fibrous, tufted. *Stem* $1\frac{1}{2}$ or 2 feet high, round, hollow, leafy, branched at the top. *Leaves* in many deep, spreading, pinnatifid, cut lobes; the radical ones on long stalks. *Fl.* globose, bright yellow, the *nectaries* of the same hue as the *petals*, scarcely half so long. *Capsules* nearly cylindrical, with shining black seeds.

The country people of Westmoreland, Scotland and Sweden consider this as a sort of festival flower, going in parties to gather it, for the decoration of their doors and apartments, as well as their persons. The qualities of this genus are slightly acrid, far less so than the foregoing or following, to both which it is botanically allied.

281. HELLEBORUS. Hellebore.

Linn. Gen. 282. Juss. 233. Fl. Br. 598. Tourn. t. 144. Lam. t. 499. Gærtn. t. 65. DeCand. Syst. v. 1. 315.

Nat. Ord. see *n. 279.*

Cal. none. *Pet.* 5, inferior, roundish, obtuse, concave, permanent. *Nect.* more numerous, much shorter, in a circle within the petals, deciduous, each of one leaf, tubular; narrower in the lower part; with 2 upright, obtuse, unequal lips at the orifice. *Filam.* very numerous, awl-shaped. *Anth.* terminal, erect, roundish, of 2 cells, bursting at the edges. *Germ.* superior, several, from 3 to 10, ovate, compressed, erect. *Styles* awl-shaped. *Stigmas* terminal, roundish. *Caps.* (*follicles*) ovate, compressed, coriaceous, keeled, beaked with the styles, opening at the rounded inner margin. *Seeds* several, oval, at the edges of the capsule, attached, in 2 rows, to a linear, double-notched, deciduous *receptacle*.

Fetid, rigid, coriaceous, nearly smooth, perennial *herbs*, of a dangerously cathartic quality, especially the *roots*. *Leaves* palmate, or pedate, or ternate, serrated; radical ones on long stalks. *Stem* leafy, branched; in some wanting. *Fl.* greenish; or whitish, turning green in decay.

1. *H. viridis*. Green Hellebore.

Stem many-flowered, leafy. Leaves digitate. Petals spreading.

H. viridis. Linn. *Sp. Pl.* 784. Willd. *v.* 2. 1336. *Fl. Br.* 598. *Engl. Bot. v.* 3. *t.* 200. Curt. *Lond. fasc.* 6. *t.* 34. Hook. *Scot.* 176. DeCand. *Syst. v.* 1. 318. Jacq. *Austr. t.* 106.

H. n. 1192. Hall. *Hist. v.* 2. 84.

H. niger hortensis, flore viridi. Raii *Syn.* 271. Robert *Ic. t.* 9.

H. niger. Brunf. *Herb. v.* 1. 30. *f.* Cord. *Hist.* 102, 2. *f.*

Helleborastrum. Ger. *Em.* 976. *f.* Lob. *Ic.* 680. *f.*

Elleborus niger adulterinus hortensis. Fuchs. *Hist.* 274. *f.* Ic. 155. *f.*

Elleborum nigrum alterum. Matth. *Valgr.* 561. *f.* Camer. *Epit.* 941. *f.*

Consiligo. Turn. *Herb. part* 1. 164. *f.*

Veratrum nigrum secundum. Dod. *Pempt.* 385. *f.*

In woods and thickets, on a chalky soil.

In Oxfordshire, Cambridgeshire, Sussex, and other chalk countries, indubitably wild, though not common. Gathered by Miss Jane Baynes, near Harefield, Middlesex; about Great Marlow and High Wickham, Bucks, by Mr. Jacob Rayer, and in the north-west part of Norfolk, by Mr. Wm. Humphrey.

Perennial. April, May.

Root fleshy, black, with numerous long stout fibres, very acrid and purgative. *Herbage* altogether annual, of a deep but bright green, smooth. *Stem* erect, round, forked, $1\frac{1}{2}$ foot high. Outer lobes of the *leaves* often combined, assuming a pedate aspect, but they are truly digitate. *Fl.* few, terminal and axillary, stalked, mostly solitary, drooping, green in every part. *Pet.* expanded. *Caps.* 3 or 4, short, wrinkled. Haller reckons up all the reputed virtues of Hellebore under this species; which indeed seems to be what German practitioners have substituted for the true plant of the ancients, *H. officinalis*, Sibth. in *Fl. Græc. t.* 523.

2. *H. fœtidus*. Stinking Hellebore. Bear's-foot, or Setter-wort.

Stem many-flowered, leafy. Leaves pedate. Petals converging.

H. fœtidus. Linn. *Sp. Pl.* 784. Willd. *v.* 2. 1337. *Fl. Br.* 598. *Engl. Bot. v.* 9. *t.* 613. Woodv. *t.* 19. Hook. *Scot.* 176. DeCand. *Syst. v.* 1. 320. Bull. *Fr. t.* 71. Ehrh. *Pl. Off.* 275.

H. n. 1193. Hall. *Hist. v.* 2. 87.

H. niger fœtidus. Bauh. *Pin.* 185. Robert *Ic. t.* 10.

Helleboraster maximus. Raii *Syn.* 271. Ger. *Em.* 976. *f.* Lob. *Ic.* 679. *f.*

Elleborus niger adulterinus sylvestris. Fuchs. *Hist.* 275. *f.* Ic. 156. *f.*

Veratrum nigrum tertium. Dod. *Pempt.* 386.f.

In thickets and waste ground, on a chalky soil.

More common than the last in chalk countries. On the castle hill, at Castle-Acre, Norfolk, abundantly.

Perennial. *March, April.*

Taller and more branched than the foregoing. *Herbage* perennial, smooth, of a more lurid green. *Fl.* numerous, paniced, drooping, smaller and more closed, tinged about the edges with purple. *Nect.* notched. *Leaves* stalked, truly pedate, of 7 or 9 lanceolate, serrated leaflets; upper ones, or rather their *foot-stalks*, gradually becoming pale, lanceolate, entire *bracteas*. *Caps.* 3 or 4. The whole herb is fetid, acrid, violently cathartic, though it has in England been more frequently used than the *H. viridis*, on the credit of the Greek Hellebore.

282. CALTHA. Marsh-marigold.

Linn. Gen. 283. *Juss.* 234. *Fl. Br.* 599. *Lam. t.* 500. *Gærtn. t.* 118. *DeCand. Syst. v.* 1. 306.

Populago. Tourn. t. 145.

Nat. Ord. see *n.* 279.

Cal. none. *Pet.* 5 or more, inferior, ovate, or elliptical, nearly flat, spreading. *Nect.* none. *Filam.* numerous, rather swelling upwards, shorter than the corolla. *Anth.* terminal, erect, oblong, of 2 lobes, bursting at the outer edges. *Germ.* superior, 5 to 10, erect, oblong, compressed. *Styles* none. *Stigmas* obtuse. *Caps.* (*follicles*,) as many as the germens, cylindrical, pointed, two-edged, erect or spreading, bursting at the upper edge. *Seeds* numerous, from the margins of the capsule, oval, with a small rounded prominence at the extremity.

Perennial smooth *herbs*, slightly acrid, natives of watery situations, with simple *leaves*, and yellow *flowers*. Those of the southern hemisphere have, as M. DeCandolle remarks, permanent *petals*, or, as he considers it, a permanent *calyx*; in those of northern climates the same part is deciduous. Two species, *C. asarifolia* and *leptopetala*, have numerous narrow *petals*, differing from the rest as *Ranunculus Ficaria* does from other species of *Ranunculus*; but M. DeCandolle is too judicious to separate them, on that account, from the rest.

1. *C. palustris.* Common Marsh-marigold.

Stem erect. Leaves heart-shaped, rounded.

C. palustris. *Linn. Sp. Pl.* 784. *Willd. v.* 2. 1338. *Fl. Br.* 599. *Comp. ed.* 4. 98. *Engl. Bot. v.* 8. *t.* 506. *Curt. Lond. fasc.* 1.

t. 40. *Forst. Tr. of Linn. Soc.* v. 8. 323. *Hook. Scot.* 176. *DeCand. Syst.* v. 1. 308. *Fl. Dan.* t. 668. *Lob. Ic.* 594.f. *Dod. Pempt.* 598.f.

C. major. *Mill. Dict. ed.* 8. n. 1.

C. n. 1188. *Hall. Hist.* v. 2. 82.

C. palustris major. *Ger. Em.* 817.f.

C. Vergilii. *Trag. Hist.* 142.f.

Populago. *Raii Syn.* 272.

Tussilago altera, sive *Farfugium.* *Matth. Valgr.* v. 2. 200.f. *Camer. Epit.* 594.f.

β . *DeCand. Syst.* v. 1. 309.

Caltha minor. *Mill. Dict. ed.* 8. n. 2.

Populago minor. *Tabern. Kreuterb.* 1128.f. “*Ic.* 750.f.”

In marshy meadows, and about the margins of ponds, rivers, and brooks, every where.

β . In similar situations, but much less frequent. Sent from Cumberland to Mr. Forster, in whose garden it remains unaltered.

Perennial. *March, April.* β . *May.*

Root thick, and somewhat tuberous, with many simple fibres. *Stem* 12 or 18 inches high, erect, round, hollow, leafy, branched, furrowed. *Leaves* variously heart-shaped, crenate; the lowermost on long, somewhat triangular, *footstalks*, largest, most rounded, and with blunter notches; upper nearly sessile, alternate, more triangular, acutely crenate. *Stipulas* membranous, withering. *Fl.* several, from 3 to 5, large, bright yellow, on alternate solitary stalks. *Pet.* 5, an inch long, roundish-oval. The flower-buds pickled serve for Capers, which they resemble, except in having numerous germens. A double variety is frequent in gardens.

β is in every part but half the size of the common sort; the *stems* are more reclining, each bearing 1, 2, or 3 *flowers*, whose *petals* are but half an inch long, yet I can find no decisive specific character. Possibly this variety may render the following species somewhat doubtful; but they require careful examination in a wild state. The cut of *Tabernæmontanus* does not at all resemble our β in the foliage.

2. *C. radicans.* Creeping Marsh-marigold.

Stem reclining, creeping. *Leaves* triangular, somewhat heart-shaped, sharply crenate.

C. radicans. *Forst. Tr. of Linn. Soc.* v. 8. 324. t. 17. *Comp. ed.* 4. 98. *Engl. Bot.* v. 31. t. 2175. *Ait. Hort. Kew. ed.* 2. v. 3. 361. *DeCand. Syst.* v. 1. 309.

By the sides of lakes and rivulets in Scotland.

First observed in Scotland by the late Mr. Dickson. Near Forfar.

Mr. G. Don. About the Pentland hills, and in Roslyn woods;

Dr. Greville: more common in some spots near Edinburgh,

than *C. palustris*; Mr. Arnott: marshes near Collace, Perthshire; Mr. Maughan. *Hooker*.

Perennial. *May, June*.

This is scarcely half the size of our common *C. palustris*. The recumbent *stems* send forth roots from several of the lower joints, creeping to a considerable extent. *Leaves* from 1 to 2 inches broad, more triangular than heart-shaped, sharply crenate; the radical ones on very long slender *footstalks*. *Petals* the colour of the foregoing, about half as large, more obovate, or sometimes obliquely wedge-shaped. *Germens* 7 or 8. A double variety of this is cultivated about London.

Class XIV. DIDYNAMIA. *Stam.* 4,
2 outermost longest.

Order I. GYMNOSPERMIA. *Seeds naked,*
4 at most.

* *Calyx in 5 segments, nearly regular.*

296. LEONURUS. *Anth.* incumbent, besprinkled with hard granulations. *Upper lip* of the *corolla* shaggy.
288. GLECHOMA. *Anth.* converging cross-wise in pairs. *Upper lip* cloven.
287. MENTHA. *Filam.* spreading widely, straight. *Corolla* nearly equal.
284. TEUCRIUM. *Upper lip* of the *corolla* in 2 very deep, remote, lateral lobes.
283. AJUGA. *Upper lip* minute, abrupt, notched.
292. BETONICA. *Upper lip* nearly flat, ascending; tube cylindrical, incurved. *Stam.* not longer than the throat.
289. LAMIUM. *Corolla* toothed at each side of the throat.
290. GALEOPSIS. *Lower lip* of the *corolla* with a pair of hollow prominences at the base in front.
291. GALEOBDOLON. *Lower lip* in 3 acute, undivided segments.
293. STACHYS. *Lower lip* with reflexed lateral lobes. *Stam.* finally spreading outwards at each side.
285. NEPETA. *Lower lip* numerously notched; throat bordered and reflexed at each side.
294. BALLOTA. *Calyx* with 10 furrows. *Upper lip* of the *cor.* vaulted, shaggy.
295. MARRUBIUM. *Cal.* with 10 furrows. *Upper lip* of the *cor.* straight, linear, cloven.
286. VERBENA. *Cal.* with 1 of the 5 teeth abrupt. *Cor.* nearly equal, curved. *Stam.* in the tube.

*** Calyx 2-lipped.*

301. SCUTELLARIA. *Cal.* when in fruit closed by a dorsal lid.
299. THYMUS. *Cal.* closed with dense converging hairs.
300. MELITTIS. *Cal.* open, wider than the tube of the *corolla*. *Upper lip* of the *cor.* nearly flat. *Anth.* converging cross-wise in pairs.
297. CLINOPODIUM. *Cal.* many-ribbed. *Involucrum* of numerous taper leaves under the flowers.
298. ORIGANUM. *Cal.* without ribs. *Invol.* of numerous dilated, flat leaves, 1 to each *flower*, collected into a spurious *catkin*.
302. PRUNELLA. *Filaments* forked, 1 of the points bearing the *anther*.

Order II. ANGIOSPERMIA. Seeds in a capsule, generally numerous.

** Calyx 4-cleft.*

307. LATHRÆA. *Caps.* of 1 cell. A *gland* under the *germen*.
303. BARTSIA. *Caps.* of 2 cells. *Seeds* angular.
304. RHINANTHUS. *Caps.* of 2 cells. *Seeds* compressed, imbricated.
306. MELAMPYRUM. *Caps.* of 2 cells. *Seeds* in pairs, tumid, smooth.
305. EUPHRASIA. *Caps.* of 2 cells. *Seeds* striated. *Anth.* spinous.

*** Calyx 5-cleft.*

314. LIMOSELLA. *Caps.* imperfectly 2-celled. *Cor.* bell-shaped, nearly equal.
310. SCROPHULARIA. *Caps.* of 2 cells. *Cor.* reversed; tube inflated; limb rounded, much shorter.
313. SIBTHORPIA. *Caps.* of 2 cells, with transverse partitions. *Cor.* nearly wheel-shaped. *Stam.* converging laterally in pairs.
311. DIGITALIS. *Caps.* of 2 cells. *Cor.* bell-shaped, tumid underneath. *Stam.* bent.

309. ANTIRRHINUM. *Caps.* of 2 cells, bursting unequally at the summit. *Cor.* closed with a palate; prominent or spurred at the base behind.
308. PEDICULARIS. *Caps.* of 2 cells. *Seeds* pointed. *Cor.* ringent; upper lip compressed.
312. LINNÆA. *Berry* dry, of 3 cells in the germen. *Cor.* bell-shaped. *Cal.* double; innermost superior.

*** *Calyx* of 2 leaves.

315. OROBANCHE. *Calyx-leaves* lateral. A gland under the germen. *Caps.* of 1 cell, with 4 *receptacles*.

DIDYNAMIA GYMNASPERMIA.

A natural order, consisting entirely of the *Verticillatæ* of Ray, and of Linnæus, 42; the *Labiataæ* of Jussieu, 39. See *Grammar* 99. A few genera, comprised in Jussieu's first section, are excluded from the present class and order of the artificial system, as having only 2 *stamens*, and are referred therefore to the second class, *Diandria*. Of these the only British genera are *Lycopus* and *Salvia*. See *vol.* i. 33—35.

The following are the characters of the *Verticillatæ*, a denomination needlessly changed for *Labiataæ*.

Flowers all complete, as well as perfect, having a *calyx* and *corolla*, with *stamens* and *pistil*, in every individual.

Calyx inferior, simple, of one leaf, erect, tubular, often tumid at the base, on the upper or lower side, permanent; orifice more or less deeply divided into 5 unequal, often pointed, spreading segments.

Corolla of 1 *petal*, erect, tubular, and containing honey, at the base, without any particular apparatus of a *nectary*; *limb* almost invariably ringent, or lipped; *upper lip* either upright, or vaulted, rarely very short, or deeply divided; *lower* in 3 divisions, the middle one almost always broadest.

Stamens 4; *filaments* linear, from the tube of the *corolla*, at

the upper side, the 2 intermediate ones being shortest, and all of them parallel, rarely longer than the corolla, their upper half usually incurved. *Anthers* oblong, attached by the back, converging in pairs, generally sheltered by the upper lip, but sometimes quite exposed.

Germen superior, 4-lobed; *style* solitary, central, thread-shaped, situated between the *stamens*, and curved in the same direction, being of an intermediate length between the longer and shorter ones; *stigma* usually cloven and divaricated, sometimes undivided, or slightly notched.

Seeds 4, lodged in the bottom of the *calyx*, which is their only covering, and serves instead of a *seed-vessel*. Each *seed* has a double integument, a *testa* and a *membrana*, both of them very thin, generally smooth. See observations on the *Asperifoliae*, vol. i. 248.

All the plants of the *Didynamia Gymnospermia* are herbaceous, or slightly shrubby, never arborescent. Their *stems* are quadrangular, branched, and leafy. *Leaves* opposite, entire or serrated, in a few instances much divided. *Flowers* stalked, axillary, either solitary, or in dense tufts constituting *whorls*; their colour reddish, purplish, blue, white, or yellow. Qualities aromatic, or bitter, in every instance harmless. The *flowers* are rarely so fragrant as the herbage, though sometimes exhaling a slight odour, peculiar to themselves. Round pellucid spots, in the *leaves* or *calyx* more especially, are the seat of an aromatic essential oil. The pubescence of the herbage, in many species, exudes a similar, or more viscid, or a bitter secretion. In growing parts, attacked by insects for the lodgment of their eggs, these secretions are changed to acid or astringent ones.

283. AJUGA. Bugle.

Linn. Gen. 287. *Fl. Br.* 604. *Lam. t.* 501.

Bugula. Tourn. t. 98. *Juss.* 112.

Chamæpitys. Tourn. t. 98.

Cal. divided about half way down into 5, nearly equal segments, permanent. *Cor.* ringent; *tube* sometimes inflated at the base, not quite straight; *upper lip* very short, erect, abrupt, notched; *lower* large, spreading, 3-lobed; the central lobe either undivided or inversely heart-shaped; lateral ones small. *Filam.* longer than the upper lip, shorter than the lower, incurved. *Germen* superior, of 4 round lobes. *Style* incurved. *Stigma* in 2 acute, spreading seg-

ments. *Seeds* 4, rugged, oblong, rounded, in the bottom of the unaltered calyx.

Herbaceous, mostly perennial; either with undivided *leaves*, aggregate blue *flowers*, and scarcely any aromatic quality; or with frequently divided *leaves*, solitary, yellow *flowers*, a strong scent, and sometimes annual *root*.

* *Bugula*. *Fl. whorled, blue*.

1. *A. reptans*. Common Bugle.

Almost smooth, with a solitary stem, and creeping scyons. Lower lip of the corolla four-cleft.

A. reptans. *Linn. Sp. Pl.* 785. *Willd. v. 3.* 10. *Fl. Br.* 604. *Engl. Bot. v. 7. t.* 489. *Curt. Lond. fasc. 2. t.* 43. *Hook. Scot.* 179. *Fl. Dan. t.* 925. *Bull. Fr. t.* 345. *Ehrh. Pl. Off.* 155.

Bugula. *Raii Syn.* 245. *Ger. Em.* 631. *f.* *Dod. Pempt.* 135. *f.* *Riv. Monop. Irr. t.* 76. *f.* 1.

B. n. 282. *Hall. Hist. v. 1.* 123.

Consolida media. *Brunf. Herb. v. 1.* 95. *f.* *Fuchs. Hist.* 391. *f.* *Matth. Valgr. v. 2.* 311. *f.* *Camer. Epit.* 702. *f.*

In woods and moist pastures, common.

Perennial. *May*.

Root rather woody, with long fibres. *Stem* solitary, simple, upright, leafy, a span high, purplish, the angles sharp, often hairy. *Scyons* long and slender, leafy, wanting in the wooden cut of Gerarde and Dodonæus, which is copied after that of Matthiolum. *Leaves* obovate, with shallow serratures, veiny; the lower ones tapering into *footstalks*; upper sessile, diminished, slightly coloured, bearing several whorls, of blue and white, sometimes entirely white, scentless *flowers*. Segments of the *calyx* hairy, as well as the outside of the *corolla*, the middle lobe of whose lower lip is cloven.

The *roots* are slightly astringent, but the *herb* has little taste or smell, and still less of any healing or vulnerary property. The white variety abounds in the isle of Wight; and a flesh-coloured one has sometimes been observed. In dry mountainous situations the plant acquires a considerable degree of hairiness.

2. *A. alpina*. Alpine Bugle.

Leaves almost smooth, irregularly toothed; uppermost entire. Scyons none. Whorls not crowded, of many flowers.

A. alpina. *Linn. Mant.* 80. *Willd. Sp. Pl. v. 3.* 9. *Fl. Br.* 605. *Engl. Bot. v. 7. t.* 477. *Hook. Scot.* 179.

A. pyramidalis. *Huds.* 248.

DIDYNAMIA—GYMNOSPERMIA. *Ajuga*. 67

A. genevensis. *With.* 516. *Scholler Barb.* 135.

Bugula cærulea alpina. *Pluk. Almag.* 73. *t.* 18. *f.* 3. *Raii Syn.* 245.

On mountains, rare.

In Carnarvonshire. *Ray*. On the summit of a mountain, near Castleton, Derbyshire. *Mr. D. Turner*. In the county of Durham. *Mr. Robson*. On the mountains of Aberdeenshire, not uncommon. *Mr. David Don*.

Perennial. *July*.

This has no creeping scyons. The *leaves* are scarcely more hairy than in the last, very coarsely and unequally toothed; many of the upper ones, and frequently all the floral leaves, ovate, and quite entire; the uppermost of all only slightly tinged with a violet colour; the *radical leaves* stalked and oblong, not much larger than the rest. *Fl.* 10 or 12, sometimes more, in each whorl. *Cal.* chiefly hairy about the teeth. *Cor.* pale blue, with darker streaks; middle segment of the lower lip undivided, more or less acute, and various in breadth. I suspect that it is often notched, or inversely heart-shaped, in which case the plant becomes *A. genevensis* of Linnæus and others; and in this state it is *A. pyramidalis* of Ehrhart's *Herb. n.* 156. and of Bulliard, *t.* 361. It is then also *Bugula n.* 283 of Haller, excluding his variety *rubrifolia*; and *B. montana* of Rivinus, *t.* 76. *f.* 2. Plukenet's figure in like manner has the middle lobe notched.

3. *A. pyramidalis*. Pyramidal Bugle.

Hairy. Whorls crowded into a pyramidal form, many-flowered. Radical leaves very large, obovate, crenate, obtuse. Upper lip of the corolla deeply cloven.

A. pyramidalis. *Linn. Sp. Pl.* 785. *Willd. v.* 3. 8. *Lightf.* 302. *Engl. Bot. v.* 18. *t.* 1270. *Comp. ed.* 4. 100. *Hook. Scot.* 179. *Fl. Dan. t.* 185.

Bugula n. 283 β , *rubrifolia*. *Hall. Hist. v.* 1. 124.

In the Highlands of Scotland, in dry pastures.

Found in Scotland by the Rev. Dr. Burgess. *Lightfoot*. On Ben Nevis, and in other places. *Dr. Hope*. On Tor Aichaltie, Ross-shire. *Mr. W. Gibb*.

Perennial. *June*.

Of a more dense and pyramidal habit, as well as much more uniformly and copiously hairy than the last. *Stem* 4 or 5 inches high, without runners. *Radical leaves* numerous, stalked, obovate, 2 or 3 inches long, and half as broad, with numerous, shallow, rounded notches; *floral ones*, or *bracteas* much smaller, pale purple. Teeth of the *calyx* very hairy, longer than its tube. *Cor.* light blueish purple, with dark streaks; upper lip in 2 deep acute lobes, by which this most distinct species is clearly marked. *Seeds* finely reticulated.

68 DIDYNAMIA—GYMNOSPERMIA. *Teucrium*.

* * *Chamæpitys*. *Fl. solitary, yellow*.

4. *A. Chamæpitys*. Ground Pine. Yellow Bugle.

Stem diffuse, branched. Leaves in three deep, linear, entire segments. Flowers axillary, solitary, shorter than the leaves.

A. Chamæpitys. *Fl. Br.* 605. *Engl. Bot. v. 2. t. 77.* *With.* 517. *Schreb. Unilab.* 24. *Willd. Sp. Pl. v. 3. 10.*

A. sive Chamæpitys. *Matth. Valgr. v. 2. 291. f. Camer. Epit.* 679. *f. Lob. Ic.* 382. *f.*

Bugula n. 284. *Hall. Hist. v. 1. 124.*

Teucrium Chamæpitys. *Linn. Sp. Pl.* 787. *Huds.* 247. *Relh.* 220. *Dicks. Dr. Pl.* 9. *Fl. Dan. t.* 733. *Ehrh. Pl. Off.* 165.

Chamæpitys. *Riv. Monop. Irr. t.* 14. *f.* 1.

Ch. vulgaris. *Raii Syn.* 244.

Ch. mas. *Ger. Em.* 525. *f.*

In sandy or gravelly fields, not general.

About the borders of Triplow heath, Cambridgeshire; and in several parts of Kent. *Ray*. At Purfleet, Essex. *Mr. J. Rayer, and Mr. E. Forster*.

Annual. *April, May*.

Root small, tapering. *Herb* hairy, glutinous, aromatic and bitter. *Stems* several, spreading and recumbent, purplish, most hairy on two opposite sides. *Leaves* crowded, in 3 deep narrow lobes, somewhat revolute. *Fl.* on very short stalks, opposite, solitary in the bosoms of the leaves. *Cal.* nearly regular. *Cor.* yellow; the upper lip very short, slightly notched; lower with 2 acute lateral lobes, and a large central one, which is inversely heart-shaped, spotted with red. *Seeds* wrinkled and dotted. *Tournefort* and *Haller* speak of a variety with rose-coloured flowers.

The reasons and history of the transfer of this plant from *Teucrium* to *Ajuga* are given at length in *Engl. Bot.*

284. TEUCRIUM. Germander.

Linn. Gen. 287. *Juss.* 112. *Fl. Br.* 606. *Tourn. t.* 98. *Lam. t.* 501. *Chamædrys*. *Tourn. t.* 97.

Cal. somewhat bell-shaped, a little unequal, tumid on one side at the base, the limb in 5 deep, acute segments. *Cor.* ringent; tube cylindrical, short, curved upwards; upper lip apparently wanting, being divided to the very base into 2 distant, ovate-oblong, ascending, lateral lobes; lower spreading, in 3 lobes, the lateral ones resembling those of the upper lip, central one larger, flat or concave, undivided or cloven. *Filam.* much longer than the up-

per lip, ascending, incurved. *Germ.* superior, 4-cleft. *Style* incurved. *Stigma* in 2 acute, spreading segments. *Seeds* 4, oblong, rounded, wrinkled, in the bottom of the permanent calyx.

Herbaceous or shrubby, bitter and aromatic, downy or hairy, with entire or serrated, rarely many-cleft, *leaves*. *Fl.* axillary, whorled, or capitate; red or yellowish in our species; sometimes blue, or white, in the numerous foreign ones.

1. *T. Scorodonia*. Wood Germander. Wood Sage.

Leaves heart-shaped, hairy, serrated, stalked. Clusters aggregate, unilateral. Stem erect.

T. Scorodonia. *Linn. Sp. Pl.* 789. *Willd. v. 3.* 24. *Fl. Br.* 606. *Engl. Bot. v. 22. t.* 1543. *Curt. Lond. fasc. 5. t.* 40. *Hook. Scot.* 180. *Fl. Dan. t.* 485. *Bull. Fr. t.* 301. *Ehrh. Pl. Off.* 406.

Chamædrys n. 287. *Hall. Hist. v. 1.* 126.

Scorodonia. *Cord. Hist.* 91, 1. *f.* *Riv. Monop. Irr. t.* 12.

S. seu Salvia agrestis. *Raii Syn.* 245. *Ger. Em.* 662. *f.*

Scordium alterum *Plinii*. *Lob. Ic.* 497. *f.*

Salvia sylvestris. *Trag. Hist.* 15. *f.* Flowers reversed.

In woods, and heathy bushy places, on a sandy soil, abundantly. Perennial. *July*.

Root creeping. *Stem* 18 inches or 2 feet high, leafy, hairy, acutely quadrangular. *Leaves* deep green, wrinkled, copiously serrated, hairy. *Clusters* numerous, terminal and axillary, erect. *Fl.* unilateral, with a small, ovate, acute *bractea* at the base of each partial stalk. *Cor.* pale yellow; middle lobe concave, hairy. *Stam.* purple. The whole plant is glutinous, and bitter, with an agreeable aromatic scent, much resembling that of Hops, for which it is said to be no bad substitute in making beer.

2. *T. Scordium*. Water Germander.

Leaves oblong, sessile, downy, with tooth-like serratures. Flowers axillary, stalked, in pairs. Stem procumbent.

T. Scordium. *Linn. Sp. Pl.* 790. *Willd. v. 3.* 27. *Fl. Br.* 606. *Engl. Bot. v. 12. t.* 828. *Woodv. t.* 57. *Schreb. Unilab.* 37. *Fl. Dan. t.* 593. *Bull. Fr. t.* 205.

Chamædrys n. 288. *Hall. Hist. v. 1.* 126.

Scordium. *Raii Syn.* 246. *Ger. Em.* 661. *f.* *Riv. Monop. Irr. t.* 11. *Fuchs. Hist.* 776. *f.* *Matth. Valgr. v. 2.* 196. *f.* *Camer. Epit.* 588. *f.* *Lob. Ic.* 497. *f.*

In low wet meadows, rare.

Plentiful in the isle of Ely. *Ray*. In several places about Cam-

70 DIDYNAMIA—GYMNOSPERMIA. *Teucrium*.

bridge. *Relhan*. On the banks of the Isis near High-bridge, and on Enesham Common, Oxfordshire. *Sibthorp*.

Perennial. *July, August*.

Herb downy, very bitter, with a strong garlick-like odour. *Root* creeping. *Stems* branched, recumbent, or prostrate. *Leaves* about an inch long, bluntish, hoary, coarsely serrated, all sessile. *Fl.* 2, sometimes more, from the bosom of each leaf, on short stalks. *Cal.* with short, broad, nearly equal teeth. *Cor.* of a pale dull purple; its middle lobe rounded, flattish, with 2 spots. *Seeds* light brown, wrinkled, filling the tube of the calyx. The *Scordium* has been considered as antipestilential and tonic; at least such was its reputation amongst ancient writers and physicians; but modern practice rejects its use.

3. *T. Chamædrys*. Wall Germander.

Leaves somewhat ovate, stalked, deeply crenate or cut. Flowers axillary, three together, stalked. Stem roundish, hairy.

T. Chamædrys. *Linn. Sp. Pl.* 790. *Willd. v.* 3. 28. *Fl. Br.* 607. *Engl. Bot. v.* 10. t. 680. *Woodv. suppl. t.* 243. *Hook. Scot.* 180. *Schreb. Unilab.* 32.

Chamædrys. *Tourn. Inst. t.* 97. *Riv. Monop. Irr. t.* 10. f. 2. *Cord. Hist.* 126. f.

Ch. n. 286. *Hall. Hist. v.* 1. 125.

Ch. vulgaris. *Clus. Hist. v.* 1. 351. f.

Ch. vulgaris seu sativa. *Raii Syn.* 231.

Ch. vera mas. *Fuchs. Hist.* 869. f.

Ch. major latifolia. *Ger. Em.* 656. f.

Trissago sive Chamædrys. *Matth. Valgr. v.* 2. 173. f. *Camer. Epit.* 567. f.

On old ruined buildings, and stony banks.

About the borders of fields, far enough from any building, and yet a doubtful native. *Ray*. On the ruins of Winchelsea castle, plentifully. *Sherard*. Upon a bank at Friar Goose near Gateshead, Durham. *Mr. Winch*. On the city wall of Norwich, between Magdalen and St. Austin's gates.

Perennial. *July*.

Root creeping. *Stems* nearly erect, branched, bushy, leafy, hairy, with rounded angles. *Leaves* even, dark green; tapering, fringed, and entire at the base; variously and deeply notched in the rest of their circumference. *Fl.* crimson; central lobe rounded, a little concave; lateral ones and tube hairy. Whole herb very bitter, scarcely aromatic, formerly used to remove obstructed secretions, to promote expectoration, perspiration, &c.

285. NEPETA. Cat-mint.

Linn. Gen. 289. *Juss.* 113. *Fl. Br.* 608. *Lam. t.* 502.

Cataria. Tourn. t. 95.

Cal. tubular, cylindrical, with 5 acute, rather unequal, direct, marginal teeth. *Cor.* ringent; *tube* cylindrical, slender, incurved, dilated at the throat, which is bordered, at each side, with a narrow, reflexed lobe; *upper lip* erect, roundish, slightly cloven; *lower* rounded, concave, large, undivided, numerous notched. *Filam.* awl-shaped, near together, covered by the upper lip. *Anth.* incumbent. *Germ.* superior, small, 4-cleft. *Style* thread-shaped, of the length and situation of the stamens. *Stigma* cloven, acute. *Seeds* 4, nearly ovate, even, in the bottom of the dry permanent calyx.

The lateral lobes of the lower lip are transferred to the margin of the tube.

Perennial, upright, finely downy, *herbs*; rarely hairy, or nearly smooth; with a strong aromatic scent. *Leaves* undivided, serrated. *Fl.* very numerous, in copious, dense, crowded whorls. *Cor.* white, reddish, or blue, often spotted. *N. multifida* but ill agrees with the character or habit of the rest.

1. *N. cataria.* Common Cat-mint, or Nep.

Whorls stalked, crowded into spikes. Leaves finely downy, heart-shaped, stalked, with tooth-like serratures.

N. cataria. Linn. Sp. Pl. 796. *Willd. v.* 3. 49. *Fl. Br.* 608. *Engl. Bot. v.* 2. *t.* 137. *Hook. Scot.* 180. *Fl. Dan. t.* 580. *Bull. Fr. t.* 287.

Nepeta. Riv. Monop. Irr. t. 52.

N. major vulgaris. Raii Syn. 237.

Cataria n. 246. *Hall. Hist. v.* 1. 108.

C. herba. Dod. Pempt. 99. *f.*

Mentha felina, seu Cattaria. Ger. Em. 682. *f.*

Herba Gattaria. Matth. Valgr. v. 2. 79. *f.* *Camer. Epit.* 484. *f.*

On banks and by road sides, principally in a chalky or gravelly soil.

Perennial. *July.*

Root tapering, with many fibres. *Herbage* hoary, very soft and downy, exhaling a strong, pungent, aromatic smell, approaching to that of *Mentha Pulegium*, and peculiarly grateful to Cats. *Stems* 2 or 3 feet high, upright, branched. *Leaves* coarsely serrated, paler beneath. *Fl.* very numerous, white; lower lip

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flesh-coloured, dotted with crimson. *Whorls* compound, stalked.
Cal. furrowed. *Seeds* smooth.

286. VERBENA. Vervain.

Linn. Gen. 14. *Juss.* 109. *Fl. Br.* 608. *Tourn. t.* 94. *Lam. t.* 17.
Gærtn. t. 66.

Cal. tubular, angular, with 5 marginal teeth, one of them rather shorter than the rest. *Cor.* unequal; *tube* cylindrical, twice as long as the calyx, straight and slender in the lower half, dilated and curved in the upper part; limb spreading, in 5 deep, rounded, somewhat unequal segments. *Filam.* 4, in some species but 2, slender, very short, incurved, within the tube of the corolla. *Anth.* incumbent, each of 2 round lobes. *Germ.* superior, quadrangular. *Style* slender, the length of the tube. *Stigma* obtuse. *Seeds* 2 or 4, oblong, angular and roughish, enclosed in one thin, membranous, evanescent pellicle.

Most of the species having 4 *stamens*, 2 long and 2 short, this genus is more commodiously placed here than in *Diandria*, where Linnæus introduces it. The covering of the *seeds* is a real *pellicle*, not a pericarp, which is evinced by the whole structure of the genus, and its evident affinity to the rest of the *Didynamia Gymnospermia*, not at all to the *Angiospermia*. This *pellicle* is similar to that of *Chenopodium*, see *vol.* ii. 9; and *Grammar* 26. Herbaceous, rarely shrubby. *Leaves* either undivided, cut, or laciniated; sometimes 3 in a whorl. *Fl.* spiked, numerous, small, blue or purplish.

1. *V. officinalis*. Common Vervain.

Stamens four. *Spikes* slender, panicled. *Leaves* deeply cut. *Stem* mostly solitary.

V. officinalis. *Linn. Sp. Pl.* 29. *Willd. v.* 1. 120. *Fl. Br.* 609.
Engl. Bot. v. 11. *t.* 767. *Curt. Lond. fasc.* 1. *t.* 41. *Woodv. suppl.*
t. 218. *Hook. Scot.* 190. *Dreves Bilderb. t.* 45. *Fl. Dan. t.* 628.
Hoffm. Germ. for 1791. 9. *t.* 2. *Bull. Fr. t.* 215.

V. n. 219. *Hall. Hist. v.* 1. 96.

Verbena. *Dorsten. Bot.* 292. *f. Riv. Monop. Irr. t.* 56.

V. vulgaris. *Raii Syn.* 236.

V. communis. *Ger. Em.* 718. *f.*

V. mascula. *Brunf. Herb. v.* 1. 119. *f.*

Verbenaca. *Matth. Valgr. v.* 2. 399. *f. Camer. Epit.* 797. *f.*

By road sides, and in dry waste ground, or pastures, about villages.
Perennial. *July.*

DIDYNAMIA—GYMNOSPERMIA. *Mentha*. 73

Root woody, somewhat creeping. *Stem* ascending, $1\frac{1}{2}$ foot high, leafy, roughish with minute prickles or bristles. *Leaves* also roughish, not downy; variously jagged, or pinnatifid, tapering at the base into short broad *footstalks*. *Spikes* several, opposite and terminal, stalked, slender, acute, much lengthened out after flowering, and all together composing a sort of panicle. *Fl.* small, blueish, inodorous. *Seeds* obtuse, dotted with minute hollows, their *pellicle* obliterated before they ripen.

This herb has scarcely any aromatic or other sensible quality. The root, worn about the neck with a string, is an old superstitious remedy, or charm, for the King's Evil.

287. MENTHA. Mint.

Linn. Gen. 291. *Juss.* 113. *Fl. Br.* 609. *Tourn. t.* 89. *Lam. t.* 503.

Cal. tubular, erect, with 5 nearly equal marginal teeth, permanent. *Cor.* straight, funnel-shaped, a little longer than the calyx; limb in 4 deep, slightly spreading, nearly equal segments, the upper one rather the broadest, with a slight notch. *Filam.* from the throat of the corolla, awl-shaped, straight, distant, longer or shorter than the limb; 2 uppermost rather the longest. *Anth.* of 2 round lobes. *Germ.* superior, 4-lobed. *Style* thread-shaped, erect, generally longer than the corolla. *Stigma* prominent, in 2 sharp, spreading, equal segments. *Seeds* 4, small, in the bottom of the calyx, rarely perfected.

Roots perennial, creeping widely. *Stems* ascending, or erect, branched, leafy, acutely quadrangular. *Leaves* stalked, mostly ovate, serrated, undivided, without *stipulas*. *Fl.* numerous, light purple, in stalked, very dense, whorls, often crowded into leafless heads or spikes. All the herbage is more or less hairy, but variable in that respect; rarely woolly, or finely downy; full of pellucid dots, lodging a copious essential oil, which is pungently aromatic, cordial and stimulant. The species are extremely variable in general habit, and have long been the opprobrium of British botanists, our country being peculiarly rich in Mints, as Dillenius long ago observed, *Raii Syn. ed.* 3. 235. The situation and direction of the hairs of the *calyx* were first pointed out, by the writer of the present *Flora*, after a careful investigation of every known species and variety, living or dried, as affording, in difficult cases, the only certain specific distinctions; and these prove invariable, though even the *inflorescence* is, in some species, inconstant. See *Observations on the British Species of Mentha*, *Trans. of Linn. Soc.* v. 5. 171—217.

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1. *M. sylvestris*. Horse Mint.

Spikes shaggy, scarcely interrupted. Leaves acute, with deep-toothed serratures; chiefly downy beneath. Bractees awl-shaped. Calyx all over hairy.

M. sylvestris. *Sm. Tr. of Linn. Soc.* v. 5. 179. *Fl. Br.* 609. *Engl. Bot.* v. 10. t. 686. *Hull.* 171. *Purt.* v. 3. 53.

α . Leaves lanceolate, acute.

M. sylvestris. *Linn. Sp. Pl.* 804. *Willd.* v. 3. 74. *Huds.* 250, α . *Hull ed.* 1. 125. *Roth. Germ.* v. 2. p. 2. 5.

M. sylvestris, longiore folio. *Bauh. Pin.* 227.

*M. spicata β , longifolia. *Linn. Sp. Pl. ed.* 1. 576.*

M. n. 1. *Linn. Hort. Cliff.* 306. *Herb. Cliff.*

M. longifolia. *Huds. ed.* 1. 221; from the author.

M. villosa prima. *Sole Menth.* 3. t. 1.

M. n. 227. *Hall. Hist.* v. 1. 99.

Menthastrum. *Dod. Pempt.* 96. f. *Ger. Em.* 684. f.

M. spicatum, folio longiore candicante. *Raii Syn.* 234. *Bauh. Hist.* v. 3. p. 2. 221. f.

β . Leaves ovate, acute.

Mentha sylvestris. *Fl. Dan.* t. 484.

M. villosa. *Huds.* 250?

M. villosa secunda. *Sole Menth.* 5. t. 2.

Menthastrum. *Riv. Monop. Irr.* t. 51. f. 1. *Matth. Valgr.* v. 2. 74. f. *Camer. Epit.* 479. f. *Fuchs. Hist.* 292. f.

γ . Leaves shorter. Spikes more obtuse.

Mentha candicans, foliis spicis et odore vulgari sativæ similis. *Doody in Raii Syn. ed.* 2. 341. In *Bobart's herbarium at Oxford*.

δ . Leaves elliptical, broad and obtuse.

M. rotundifolia. *Sole Menth.* 9. t. 4.

M. nemorosa. *Willd. Sp. Pl.* v. 3. 75.

M. alopecuroides. *Hull ed.* 1. 126.

M. sylvestris, rotundiore folio. *Bauh. Pin.* 227. Seen by Haller, in *Bauhin's herbarium*.

M. hortensis secunda. *Fuchs. Hist.* 289. f.

M. altera. *Dod. Pempt.* 95. f.

Menthastrum sylvestre, foliis latis. *Besl. Hort. Eyst. æst. ord.* 7. t. 3. f. 2.

In waste ground, especially in watery places.

α and β are not uncommon. γ was found plentifully in Kent, by Rand and Buddle. δ is frequent in Norfolk.

Perennial. *August, September*.

Whole herb of a hoary or greyish green, clothed with fine soft downy hairs, and exhaling a strong peculiar scent. Stems erect, 2 or 3 feet high, rather bluntly quadrangular, branched, leafy, their pubescence pointing downwards. Leaves nearly or quite sessile, from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, spreading, strongly and sharply

serrated, acute, veiny, varying from an ovate-lanceolate to an ovate, or almost orbicular, figure ; their upper surface hoary ; under shaggy with dense, soft, white hairs. *Spikes* several, terminal, erect, generally acute, forming a sort of panicle, each composed of numerous, dense, crowded, bracteated *whorls*, of small, pale purple *flowers*. *Bracteas* linear-lanceolate, spreading, the outer pair largest. *Flower-stalks* covered with short reflexed hairs ; *calyx* with erect ones.

All the varieties, especially α and δ , sometimes acquire a sweet, very agreeable, scent ; but I have not met with any such in British specimens. Haller's *n.* 228 is one of these fragrant varieties, various in the breadth of its *leaves*. It is *M. gratissima* of Wiggers, Roth, Hoffmann, and Willdenow. The comparative length of the *stamens*, by which Linnæus and others have attempted to distinguish *Menthæ*, is but an uncertain criterion. If the plant increases much by root, the *stamens* are shorter and less perfect, and the *seeds* do not ripen.

2. *M. rotundifolia*. Round-leaved Mint.

Spikes interrupted, somewhat hairy. Leaves elliptical, obtuse, wrinkled, sharply crenate ; shaggy beneath. Bracteas lanceolate.

M. rotundifolia. Linn. *Sp. Pl.* 805. Willd. *v.* 3. 77. Sm. *Tr. of Linn. Soc.* *v.* 5. 183. Fl. Br. 611. Engl. Bot. *v.* 7. t. 446. Hull 171.

M. crispa. Linn. *Sp. Pl. ed.* 1. 576.

M. sylvestris. Sole *Menth.* 7. t. 3.

M. n. 226. Hall. *Hist.* *v.* 1. 99.

Menthastrum anglicum. Riv. *Monop. Irr. t.* 51. f. 2.

M. folio rugoso rotundiore, spontaneum, flore spicato, odore gravi.

Raii Syn. 234. *Herb. Buddle.* Bauh. *Hist.* *v.* 3. p. 2. 219. f.

Sisymbrium hortense. Matth. *Valgr.* *v.* 1. 440. f.

β . *M. niveum anglicum.* Ger. *Em.* 684. f. Lob. *Ic.* 510. f. Dalech. *Hist.* 674. f.

M. spicatum, folio crispo rotundiore, colore partim albo, partim cinereo vel virente. Bauh. *Hist.* *v.* 3. p. 2. 219. f.

M. cinereum vel niveum anglicum, variegatis foliis. Besl. *Hort. Eyst. æst. ord.* 7. t. 3. f. 2.

In wet places amongst rubbish, or about the borders of ditches, moats and ponds, but rare.

By the river side at Lydbrook, near Ross, Herefordshire ; also at Falkburn Hall, Essex. Ray. Near Hally in Kent. Doody. On the edge of an old moat at Shingham, Norfolk. Rev. R. Forby. Near Chepstow, Monmouthshire.

Perennial. August, September.

Essentially different from every state of the preceding, with some of the round-leaved varieties of which it has often been confounded. The colour of the whole herb is a grass green, though

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the under sides of the *leaves* are shaggy, not hoary ; the veins fringed with close hairs. The *leaves* moreover are universally wrinkled or blistered, sessile, always roundish-heart-shaped, or elliptical, from 1 to 2 inches long, with shallow, unequal notches or serratures. The whole *inflorescence* is smaller in proportion. *Bracteas* broader, and more ovate. *Calyx* hairy, much shorter and wider, almost bell-shaped. *Stam.* always long and prominent. The whole plant is viscid, and its peculiar acrid smell, which Haller thought highly grateful, can never fail to distinguish this species, after having been dried for 30 years, or more.

β is a garden variety, strikingly variegated with white, retaining its original scent.

3. *M. viridis*. Spear Mint.

Spikes interrupted. Leaves sessile, lanceolate, acute, naked. Bracteas bristle-shaped, somewhat hairy as well as the teeth of the calyx. Flower-stalks very smooth.

M. viridis. Linn. *Sp. Pl.* 804. Willd. v. 3. 76. Sm. *Tr. of Linn. Soc.* v. 5. 185. Fl. Br. 612. Engl. Bot. v. 34. t. 2424. Woodv. t. 170. Sole *Menth.* 11. t. 5. Hull 171.

M. spicata α , *viridis*. Linn. *Sp. Pl. ed.* 1. 576.

M. n. 229. Hall. *Hist.* v. 1. 100.

Mentha. Camer. *Epit.* 477. f. good.

M. romana. Ger. *Em.* 680. f.

M. romana officinarum, sive præstantior *angustifolia*. Lob. *Ic.* 507. f. *Herb. Buddle. Moris.* v. 3. 367. sect. 11. t. 6. f. 1.

M. hortensis tertia. Fuchs. *Hist.* 290. f.

β . *M. angustifolia spicata*. How *Phyt.* 74. Raii *Syn. ed.* 1. 79.

M. angustifolia spicata glabra, folio rugosiore, odore graviore. Raii *Syn. ed.* 2. 123. ed. 3. 233. *Herb. Sherard.*

M. spicata nostras, cardiacæ sativæ formâ et odore æmula, folio rugosiore. Pluk. *Mant.* 129.

M. spicata, folio longiore acuto glabro nigriori. Bauh. *Hist.* v. 2. p. 2. 220. f.

γ . *M. spicata angustifolia glabra*, spicâ latiore. Dill. in Raii *Syn.* 233. *Herb. Sherard*, from Mr. Dale.

M. sylvestris, longioribus, nigrioribus, et minùs incanis foliis. Bauh. *Pin.* 227. Sherard.

Menthastrum campense. Dalech. *Hist.* 673. f.

δ . *Mentha spicata glabra*, latiore folio. Dill. in Raii *Syn.* 234. *Herb. Sherard*, from Mr. Dale.

In marshy places.

α . Near Exmouth, Devonshire, and on the banks of the Thames. Hudson. On a common between Glastonbury and Wells ; in a meadow 4 miles from Bath ; and in various places by the side of the Avon, between Bath and Kelston. Sole.

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β. By the river at Bocking, Essex. *Dale*. By the Medway near Maidstone, Kent. *Plukenet*. At Babergh near Norwich. *Mr. Pitchford*. Near Acle church, Norfolk, towards the south. *Mr. D. Turner*.

γ. In a meadow at Bocking, Essex. *Dale*, *Dillenius*.

δ. In a meadow by Marwood bridge, between Mersey island and Colchester. *Dill*.

Perennial. *August*.

Stems 2 or 3 feet high, erect, branched, acutely angular, smooth, often purplish. *Leaves* sessile, lanceolate, acute, serrated, smooth; sometimes a little hairy beneath, especially in the 3 latter varieties, in all which also they are shorter and broader, with a less agreeable scent, than in α, the true garden Spear Mint, or Mackarel Mint. *Spikes* paniced, elongated, acute; almost all the *whorls* a little distant from each other, with narrow or bristle-shaped *bracteas*, which are seldom quite smooth even in α, and in the varieties are more or less hairy, as well as broader. *Flower-stalks* always, in every variety, perfectly smooth, round and polished. *Cal.* narrow-bell-shaped, furrowed, with 10 ribs, besprinkled, like the foliage, with resinous dots, and always quite smooth, except the teeth, which though generally smooth or naked in the primary variety, in all the others are variously hairy. The separate flower in *Engl. Bot. t.* 2424, shows this in the variety β, to which also the leaf belongs. *Cor.* light purple, smooth, generally longer than the *stamens*. *Style* prominent. The whole inflorescence, *bracteas* and *calyx* often acquire a dark purplish hue.

The whole herb is gratefully aromatic, warm and pungent; the flavour of the varieties less agreeable. The perfectly smooth and naked *flower-stalks*, in all the varieties, are essentially characteristic of this species.

I suspect *M. crispa* of Linnæus, *Ehrh. Pl. Off.* 206, known in gardens only, may be a variety of *M. viridis*.

4. *M. piperita*. Pepper Mint.

Spikes blunt, interrupted below. Leaves stalked, somewhat ovate, smoothish. Calyx very smooth at the base.

M. piperita. *Sm. Tr. of Linn. Soc.* v. 5. 189. *Fl. Br.* 613.

α. Leaves ovate-lanceolate. Spikes elongated.

M. piperita. *Engl. Bot.* v. 10. t. 687. *Huds.* 251. *With.* 523, var. 2. *Woodv. t.* 169. *Hull* 172. *Pharmac. Lond.* *Ehrh. Pl. Off.* 216.

M. piperita officinalis. *Sole Menth.* 15. t. 7.

M. officinalis. *Hull ed.* 1. 127.

M. aquatica nigricans, fervido sapore. *Herb. Buddle*.

Eales' Pepper Mint. *Pet. H. Brit. t.* 31. f. 10.

β. Leaves ovate. Spikes shorter and blunter, almost capitate.

M. piperita. *Hull ed.* 1. 127. *Willd. Sp. Pl.* v. 3. 79.

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M. piperita vulgaris. *Sole Menth.* 19. t. 8.

M. spicis brevioribus et habitioribus, foliis Menthæ fuscæ, sapore fervido piperis. *Raii Syn. ed.* 2. 124. *ed.* 3. 234. t. 10. f. 2.

M. fervida nigricans, brevior folio et spicâ. *Herb. Sherard.*

M. aquatica sive Sisymbrium. *Bauh. Hist. v.* 3. p. 2. 223. f.

γ. Leaves ovate, slightly heart-shaped. Spikes more acute.

M. piperita sylvestris. *Sole Menth.* 53. t. 24.

M. hircina. *Hull. ed.* 1. 127.

In watery places.

α. In Hertfordshire, Dr. Eales; *Ray.* In a swampy place on Lansdown, near Bath, called the wells; also by the side of the Avon, in Newton mead. *Mr. Sole.* At Hauxton, Cambridge-shire. *Rev. R. Relhan.* In a mountain rivulet in Bonsall dale, near Matlock bath, Derbyshire, 1790.

β. In Essex. *Dale.* By Wandsworth river. *Herb. Sherard.* About Bath, and between Wells and Glastonbury; also in Chiltern bottom, Wilts. *Mr. Sole.*

γ. At Lyncomb Spa, and various other wet places about Bath. *Mr. Sole.* At the south-west corner of Saham meer, near Wat-ton, Norfolk.

Perennial. *August, September.*

Stems nearly erect, branched, roughish with recurved hairs, and generally 2 or 3 feet, in γ 4 feet, high. *Leaves* all stalked, dark green, ovate, acute, varying in breadth, sharply serrated; smoothish above; paler and more hairy beneath; never downy nor shaggy like *M. sylvestris*. *Spikes* bluntish; interrupted and leafy in their lower part; in β short, dense and obtuse, commonly with one very distant whorl; in γ acute, with 2 or more such. *Bractæas* lanceolate, fringed. *Flower-stalks* either perfectly smooth, or in their upper part only a little hairy. *Cal.* slender, furrowed, covered with pellucid dots, quite smooth in its lower half, but the dark-purple teeth, and in γ the upper part of the tube, are more or less densely hairy. *Cor.* purplish. *Stam.* in all my specimens short; *style* long.

The warm camphor-like scent and flavour of this species, succeeded by a coolness, are familiar to every body, and the essential oil, or distilled water, of Pepper Mint enters into various cordial or medical preparations. The variety γ is less agreeable than the others. England has always been known as the country of the true *M. piperita*. What supplies its place in the north of Europe, is merely a variety of *M. hirsuta* having a similar odour; and this is named *piperita* in the Linnæan herbarium. *Mr. Sole* justly criticises the figure in *Ray's Synopsis*, as having the leaves of the true *piperita* with the inflorescence of *hirsuta*; or rather perhaps of *piperita* β. But he was not aware of all the figures of that 3d edition having been drawn and engraved by the hand of Dillenius, long after the time of *Ray*. The styles in

both figures of this *t.* 10, look like *stamens*, if they can be thought like any thing. Mr. Sole copies both Hudson's erroneous references to Petiver, without correction.

5. *M. citrata*. Bergamot Mint.

Spikes capitate, very blunt. Leaves stalked, heart-shaped, naked on both sides. Calyx and flower-stalks perfectly smooth.

M. citrata. *Ehrh. Beitr.* v. 7. 150. *Willd. Sp. Pl.* v. 3. 79.

M. odorata. *Sole Menth.* 21. *t.* 9. *Sm. Tr. of Linn. Soc.* v. 5. 192. *Fl. Br.* 615. *Engl. Bot.* v. 15. *t.* 1025. *Hull* 172. *ed.* 1. 127. *Ait. Hort. Kew. ed.* 2. v. 2. 388.

M. rubra. *Mill. Dict. ed.* 8. n. 9; with a wrong description.

M. rotundifolia rubra, aurantii odore. *Moris.* v. 3. 369. *sect.* 11. *t.* 6. *f.* 3, the smooth one.

In watery places, rare.

Very common by the sides of rivers and brooks in Cheshire; especially about Aston-house; Mrs. Walmsley; also in a small brook or ditch near Capel-Carey, between Llanrost and Llanberis, North Wales. *Mr. Sole*. Near Bedford. *Rev. Dr. Abbot*.

Perennial. *August, September*.

Whole *herb* smooth in every part, often red or purple, with a powerful, very fragrant scent, like the Bergamot Orange, or the herbage of *Monarda didyma*, on which account it is often preserved in gardens. The *stems*, about 2 feet high, are bushy, copiously branched, and spreading. *Leaves* broadly heart-shaped, an inch, or inch and half long, serrated, with many parallel transverse veins. *Fl.* in round, blunt, terminal *heads*, with a stalked axillary *whorl* or two, at some distance beneath. *Bractees* bristle-shaped, always quite smooth, as well as the round *flower-stalks*. *Cal.* cylindrical, ribbed, covered with resinous dots, but always destitute of all hairiness. *Cor.* reddish purple. *Stam.* short, within the tube.

The name of Ehrhart, which I had not observed when writing the *Fl. Brit.*, has not only a prior claim to what I have there adopted, but is so much more appropriate, that I cannot but prefer it, in justice to its author.

6. *M. hirsuta*. Hairy Mint.

Flowers capitate or whorled. Leaves stalked, ovate. Calyx clothed with erect hairs. Flower-stalks with recurved ones.

M. hirsuta. *Sm. Tr. of Linn. Soc.* v. 5. 193. *Fl. Br.* 616. *Hull* 172. *Relh.* 227. *Hook. Scot.* 180. *Lond. t.* 166.

M. sativa. *Tr. of Linn. Soc.* v. 5. 199.

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- α . *M. hirsuta*. *Linn. Mant.* 81. *Willd. Sp. Pl. v. 3.* 78. *Engl. Bot. v. 7. t. 447.* *With.* 522. *Huds. ed. 1.* 223. *Hull ed. 1.* 127. *Abbot* 127.
M. n. 4. *Linn. Hort. Cliff.* 306.
M. aquatica. *Huds.* 252 α and β . *Hull ed. 1.* 127. *Sibth.* 182. *Abbot* 127.
M. aquatica major. *Sole Menth.* 25. *t. 11.*
M. aquatica minor. *Sole Menth.* 23. *t. 10.*
M. n. 225, α . *Hall. Hist. v. 1.* 99.
M. aquatica, sive Sisymbrium. *How Phyt.* 74. *Merr. Pin.* 76. *Raii Syn.* 233. *Ger. Em.* 684. *f.*
M. aquatica, sive Sisymbrium hirsutius. *Bauh. Hist. v. 3. p. 2.* 224. *f.*
M. rotundifolia palustris. *Moris. sect. 11. t. 7. f. 6.*
M. palustris spicata. *Riv. Monop. Irr. t. 49.*
 Common Water Mint. *Pet. H. Brit. t. 31. f. 6.*
Sisymbrium hirsutum. *Raii Syn.* 233.
S. hirsutum, folio angustiore et acutiore, minimè ramosum; D. Rand. Herb. Buddle.
S. sylvestre. *Matth. Valgr. v. 1. 441. f. Camer. Epit. 268. f. Dalech. Hist. 677. f.*
Origanum vulgare. *Fl. Dan. t. 638 !*
 β . *Mentha Sisymbrium dicta hirsuta, glomerulis ac foliis minoribus ac rotundioribus.* *Dill. in Raii Syn. 233. t. 10. f. 1.*
M. n. 225, β . *Hall. Hist. v. 1.* 99.
 γ . *M. piperita.* *Linn. Sp. Pl.* 805. *Herb. Linn. Berg. Mat. Med.* 516.
 δ . *M. palustris.* *Sole Menth.* 13. *t. 6.*
M. aquatica. *Mill. Dict. ed. 8. n. 5.*
M. aquatica, folio oblongo viridi glabro, saporis fervidissimi. *Herb. Buddle and Herb. Bobart.*
Menthastris aquatici genus hirsutum, spicâ latiore. *Bauh. Hist. v. 3. p. 2. 222. f. Raii Syn. 234.*
Menthastrum minus spicatum Lobelii. *Dalech. Hist. 674. f. How Phyt. 74.*
M. minus. *Ger. Em.* 685. *f.*
Calamintha tertia Dioscoridis, menthastrifolia aquatica hirsuta. *Lob. Ic. 510. f. Dill. in Herb. Sherard.*
 ϵ . *Mentha paludosa.* *Sole Menth.* 49. *t. 22.*
 ζ . Flowers all whorled.
M. sativa. *Linn. Sp. Pl.* 805, *excl. the synonyms.* *Huds.* 253. *Engl. Bot. v. 7. t. 448.*
M. verticillata. *Linn. Syst. Nat. ed. 10. v. 2. 1099, A. Herb. Linn. Huds. ed. 1. 222. Riv. Monop. Irr. t. 48. f. 1; hairiness wanting.*
M. rivalis β , γ and δ , not α . *Sole Menth.* 45.
M. verticillatæ varietas, hirsutiè foliorum discrepans. *Raii Syn. ed. 2. 124, under n. 6. ed. 3. 232. Herb. Bobart.*

M. crispa verticillata. *Bauh. Pin.* 227.

M. sisymbriæ facie et odore, hirsuta et verticillata; *D. Rand. Herb. Buddle.*

M. altera. *Camer. Epit.* 478. *f.*

Menta. *Fuchs. Hist.* 288. *f.*

Calamenthæ arvensi verticillatæ similis, sed multò elatior. *Herb. Buddle.*

Cross Whirl Mint. *Pet. H. Brit. t.* 31. *f.* 8?

η. *Mentha aquatica verticillata glabra, rotundiore folio*. *Dill. in Herb. Sherard.*

θ. *M. verticillata minima, odore fragrantissimo*. *Herb. Buddle.*
Confounded under *M. aquatica exigua*, by *Dill. in Raii Syn.* 232, *n.* 2, with wrong synonyms. See *Tr. of L. Soc. v.* 5, γ.

In watery places every where.

α. The most common of all our Mints.

β. In the parish of East Borne, Sussex, in the road to Pevensey, observed by Mr. Manningham. *Dillenius*. A common variety.

γ. A native of England, according to the Banksian herbarium.

δ. Near Bocking. *Dale*. In Somersetshire. *Mr. Sole*. On the south-west shore of Saham meer, Norfolk.

ε. In Holt fen, at Streatham near Ely; also in a rivulet by the side of Audry causeway, near Haddenham, isle of Ely. *Mr. Sole*.

ζ. About rivulets on the side of Shotover hill near Oxford; *Mr. Tilleman Bobart. Herb. Bobart*. On the banks of the Lea, near Hackney. *Mr. E. Forster*. At Saham and Ashill, Norfolk; also 11 miles from Norwich, on the Hingham road, and in many other places.

η. In a ditch on the left hand of Chalk's green, going from Braine-tree to Leez-house. *Dillen. Ms.*

θ. Found by Mr. Buddle and Mr. F. Dale, sen. by the side of the New river, near the upper end of Stoke Newington. *Herb. Sherard*. On Skoulton Common, near Hingham, Norfolk, but with only the usual smell of this species.

Perennial. *August, September*.

The roots creep to a great extent. *Herb* very variable, more or less hairy; very seldom almost smooth, except the *flower-stalks* and *calyx*; but a smooth plant removed to a garden became as hairy as any of the varieties, in the following year. The scent also varies from a fetid, marshy, though pungently aromatic, odour, which is usual in the whole species, to the camphorated flavour of true Pepper Mint, *n.* 4, for which our variety γ serves in the north of Europe. Some varieties acquire a sweet scent, like Basil, but that is transient. I have specimens gathered in 1743, which still retain the fine odour of Frankincense Thyme. *Stems* generally erect, and mostly branched, clothed with rather short hairs, curved downwards. *Leaves* stalked, ovate, serrated, hairy, from an inch to 1½ inch long, rarely more or less, except

in variety δ . They vary but little in shape; but often acquire a dark purplish hue. *Fl.* of a light blueish purple, numerous and crowded; in α , β and γ capitate, with one or more pair of stalked axillary *whorls* below the head; in δ the head becomes a *spike*, with several *whorls*, more or less remote; in ϵ the whole *spike* is whorled, and somewhat leafy; in the rest all the *flowers* are whorled and axillary. *Bracteas* lanceolate, hairy. *Flower-stalks* densely covered, for the most part, but especially at the summit, with recurved, sometimes close-pressed, white hairs. *Cal.* tubular, furrowed, mostly purplish, besprinkled with resinous dots, and clothed with hairs, various in length, all constantly curved in a contrary direction from those of the stalks. *Cor.* hairy externally. *Stam.* various in length. The lower whorls are usually stalked.

Botanists have been very unwilling to believe the curious change of a capitate Mint to a whorled one; but this alteration may often be traced in the same ditch. Some copy me for this fact, without adverting to its author or seeming conscious of its having ever been disputed. I have received dried as well as living specimens, from the late Mr. Sole, of all his varieties, of this and other species, and have cultivated them in a dry garden, as well as in a very wet one. I have observed all the difficult ones, year after year, in their wild situations, and have no doubt that all these varieties of *M. hirsuta* especially, constitute but one species. Occasional examinations, during the course of 25 years, have not only confirmed this opinion, but have also ascertained the truth of the essential characters derived from the pubescence of the *calyx* and *flower-stalks*, as being decisive without any exception. I regret that my friend Mr. Sole took great offence at my not following all his names and errors; but I hope I have never corrected them unhandsomely, nor do I mean to undervalue his book, which is a valuable record of the several varieties of this difficult genus, though no guide at all as to the limits or names of the species. Professor Hooker, in the most flattering terms, confirms my account of this Mint; but the hairs on the flower-stalks, in his otherwise excellent plate, are not enough deflexed.

7. *M. acutifolia*. Fragrant Sharp-leaved Mint.

Flowers whorled. Leaves ovate-lanceolate, tapering at each end. Calyx hairy all over. Hairs of the flower-stalks spreading.

M. acutifolia. *Sm. Tr. of Linn. Soc.* v. 5. 203. *Fl. Br.* 619. *Engl Bot.* v. 34. t. 2415. *Hull* 173.

M. verticillata. *Mill. Dict. ed. 8. n.* 17. *From his own herbarium.*

M. verticillata aromatica, folio longiore et acutiore. *Rand Ms.*

M. aquatica verticillata, odoris grati. *Herb. Buddle.*

About the banks of rivers, rare.

On the banks of the Medway, Kent. *Rand.* Between Rochester and Chatham. *Miller.*

Perennial. *September?*

Herb hairy all over, exhaling, when rubbed, the sweet scent of Frankincense Thyme. *Stem* erect, 2 feet high, apparently unbranched, leafy, all its hairs closely reflexed, various in length. *Leaves* on rather short stalks, spreading, 1 to 2 inches long, ovate-lanceolate, narrower than in the foregoing, sharply and unequally serrated, acute, as well as entire, at each end. *Whorls* dense, sessile, many-flowered, axillary, accompanying every pair of leaves, and concealing the *footstalks*. *Bracteas* linear-lanceolate, or awl-shaped. *Flower-stalks* thickly covered with hairs of various lengths, spreading horizontally, or now and then slightly recurved. *Cal.* tubular, clothed in every part, but most densely at the base, with ascending hairs. *Cor.* hairy at the outside, as well as in the throat; its colour, according to Buddle, nearly red. *Stam.* shorter than the corolla. *Style* much longer.

Very closely related to the last species. How far it is distinct can be determined by the discovery, and sufficient examination, of fresh specimens only.

8. *M. rubra*. Tall Red Mint.

Flowers whorled. Leaves ovate. Stem upright, zigzag. Flower-stalks, and lower part of the calyx, very smooth; teeth hairy.

M. rubra. *Sm. Tr. of Linn. Soc.* v. 5. 205. *Fl. Br.* 620. *Engl. Bot.* v. 20. t. 1413. *Hull* 173. *Hook. Scot.* 180?

M. sativa. *Sole Menth.* 47. t. 21; calyx very erroneous.

M. verticillata. *Raii Syn.* 232; but not of Rivinus.

M. crispa. *Besl. Hort. Eyst. æst. ord.* 7. t. 5. f. 1.

M. rotundiore folio glabro, pulegii flore. *Moris.* v. 3. 369. *sect.* 11. t. 7. f. 2. *Herb. Bobart.*

M. crispa verticillata, folio rotundiore. *Raii Syn. ed.* 2. 124. *Herb. Buddle, and Herb. Sherard. Bauh. Hist.* v. 3. p. 2. 215. f.

M. prima. *Dod. Pempt.* 95. f.

M. sativa rubra. *Ger. Em.* 680. f.

M. cruciata. *Lob. Ic.* 507. f.

Menta. *Brunf. Herb.* v. 2. 76. f.

About wet hedges and thickets, and the reedy banks of rivers or ditches.

By the river Lea near the ferry house. *Herb. Sherard.* Peckham fields. *Dillenius.* In North Wales, and Shropshire. *Mr. Sole.* By the road side between Edmonton and Enfield; also near Walthamstow. *Mr. E. Forster.* Under a wet hedge in the road from Watton to Saham church, Norfolk.

Perennial. *September.*

The whole herb is usually almost smooth, though in dry situations liable to become minutely hairy, when the hairs on the *stem* are

recurved. Its scent is that of most of this genus, especially *M. viridis*; but I have a Shropshire specimen from the Rev. E. Williams, smelling like *M. arvensis* hereafter described. The stem is from 4 to 6 feet high, erect, though more or less wavy, supporting itself on bushes, and never quite straight; with few and short branches; leafy, variously tinged with deep red, mostly smooth and shining. Leaves stalked, broadly ovate, strongly serrated, of a deep shining green; paler beneath, copiously besprinkled with resinous dots; the upper ones small and short, occasionally crisped; all either quite smooth, or bearing a few minute hairs on the ribs and veins, some such being scattered over the upper surface. Whorls numerous, stalked, of many large reddish flowers. Bracteas linear, fringed, at least towards the point; innermost bristle-shaped. Flower-stalks round, of a shining red or purple, invariably smooth, as is also the lower part of the tubular calyx, though its teeth are always hairy, or fringed, and the upper part of the tube is occasionally hairy, its whole surface bearing resinous dots. Cor. large, quite smooth, partly in like manner dotted. Stam. various in length on the same specimen.

Our earlier British Botanists confounded this with the Linnæan *M. sativa*, or *verticillata*, see *M. hirsuta* ζ, p. 79, under the appellation of C. Bauhin's *M. crispa verticillata*, but on attentive consideration of his synonyms, I think the latter writer had not our *rubra* in contemplation. This is however the plant of Ray, and probably of J. Bauhin. It is by far the tallest and handsomest of our Mints, and cannot be confounded with any other.

9. *M. gentilis*. Bushy Red Mint.

Flowers whorled. Leaves ovate. Stem much branched, spreading. Flower-stalks, and base of the bell-shaped calyx, nearly smooth.

M. gentilis. Linn. *Sp. Pl.* 805. Willd. *Sp. Pl.* v. 3. 80? Sm. *Tr. of Linn. Soc.* v. 5. 208. Fl. Br. 621. Engl. Bot. v. 30. t. 2118. Hull 173. Hook. *Scot.* 181?

M. rubra. Sole *Menth.* 41. t. 18.

M. n. 224. Hall. *Hist.* v. 1. 98.

β. *M. rivalis* α. Sole *Menth.* 45. t. 20.

γ. *M. variegata*. Sole *Menth.* 43. t. 19.

M. arvensis verticillata versicolor. Moris. *sect.* 11. t. 7. f. 5. *Herb. Buddle*.

M. crispa verticillata. *Herb. Clifford*.

In watery waste places, rare.

α. In pools and brooks between Mole and Llanroost, North Wales. Mr. Sole. Shropshire. Rev. E. Williams. Near Holt, Norfolk. Prof. Hooker and Mr. Borrer.

β. In Lock's brook, between Weston and Twiverton, Somersetshire. *Mr. Sole*.

γ. About towns, but scarcely to be found truly wild.

Perennial. *August*.

The whole herb is of a lighter green than the last, all over more or less minutely hairy, and, when planted in a dry situation, pleasantly scented; in wet ground it has the ordinary smell of Mint. *Stem* erect, bushy, with numerous spreading branches, leafy, 12 or 18 inches, in β near 3 feet, high; when not quite smooth, the hairs are recurved, as usual. *Leaves* stalked, uniformly ovate, not much pointed, serrated, dotted, scarcely paler beneath; the upper surface besprinkled with fine small hairs; rib and veins of the under side beset with rather stronger ones; in β the *leaves* are longer and more elliptical; in γ prettily variegated with yellow, and more fragrant. *Whorls* nearly sessile, except occasionally from cultivation in γ. *Bractæas* lanceolate, hairy, varying in size. *Flower-stalks* round, purplish, for the most part very smooth; but in γ, especially when cultivated in very dry ground, they sometimes bear a few deflexed hairs. *Cal.* shorter, and more spreading or bell-shaped, than in *M. rubra*, rough with ascending hairs about the teeth, and more or less of the tube, the base of which is naked and smooth. *Cor.* pale purple. *Stam.* seldom so long as the limb.

The figures of this species and of *M. rubra* in *Engl. Bot.* both very characteristic, sufficiently show how distinct they are; and if the *calyx* be attended to, nobody can confound them. I therefore quote *Fl. Scotica* with doubt, the worthy author appearing unacquainted with my plants.

10. *M. gracilis*. Narrow-leaved Mint.

Flowers whorled. Leaves lanceolate, nearly sessile. Stem upright, much branched. Flower-stalks, and base of the calyx, quite smooth.

M. gracilis. *Sm. Tr. of Linn. Soc.* v. 5. 210. *Fl. Br.* 622. *Hull* 173. *Sole Menth.* 37. t. 16.

M. gentilis. *Engl. Bot.* v. 7. t. 449. *With.* 524.

M. rubra. *Huds.* 252.

M. fusca, sive vulgaris. *Raii Syn. ed.* 2. 123. *ed.* 3. 232. *Herb. Buddle*.

M. verticillata glabra, odore *Menthæ sativæ*, (that is *viridis*). *Herb. Sherard*.

M. verticillata, folio angustiore. *Riv. Monop. Irr.* t. 48. f. 2.

Balsamita officinarum. *Besl. Hort. Eyst. æst. ord.* 7. t. 3. f. 3.

β. *M. pratensis*. *Sole Menth.* 39. t. 17. *Hull ed.* 1. 129.

* γ. *M. gentilis*. *Sole Menth.* 35. t. 15.

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M. hortensis verticillata, Ocymi odore. *Moris. v. 3. 369. sect. 11. t. 7. f. 1. Herb. Buddle.*

M. verticillata minor, acuta, non crispa, odore Ocymi. *Bauh. Hist. v. 3. p. 2. 216. f. 217.*

M. cardiaca. *Ger. Em. 680. f.*

Red Mint. *Pet. H. Brit. t. 31. f. 7.*

In watery places, or moist meadows.

At Bocking and Stoke Newington. *Sherard's herbarium.* Near Walthamstow. *Mr. B. M. Forster.* Near Bradford, Wilts. *Mr. Sole.* At Saham and Oxborough, Norfolk.

β . In the New Forest, Hants. *Mr. Sole.*

γ . Frequent in ditches and waste places, near towns and villages, but scarcely wild. *Mr. Sole.*

Perennial. *August, September.*

Herbage of a grass green, clothed more or less with short scattered hairs. *Stems* erect, tufted, leafy, reddish, about 18 inches high, roughish here and there, with minute, recurved, rigid hairs; most branched about midway from the ground. *Leaves* nearly sessile, uniform, lanceolate, acute, serrated; contracted at the base full of small pellucid dots, slightly hairy, and nearly of the same hue, on both sides; in β they are directed downwards. *Whorls* many-flowered, sessile, rarely stalked. *Bracteas* lanceolate, hairy, or fringed. *Flower-stalks* all perfectly and invariably smooth, round, commonly purple. *Cal.* tubular, but short, and rather bell-shaped, covered with prominent resinous dots, purplish; the base and lower half quite smooth; teeth and upper part clothed with upright white hairs, various in quantity and length. *Cor.* light purple, bearded at the tip. *Stam.* short.

This species, in its ordinary state, smells like *M. viridis*, n. 3; β like *M. piperita*, but not so pungently or agreeably; while γ has the delightful fragrance of *Ocimum*, Sweet Basil. The leaves accompanying the whorls, in this last variety, are very much smaller than the rest.

11. *M. arvensis.* Corn Mint.

Flowers whorled. Leaves ovate. Stem much branched, diffuse. Calyx bell-shaped, covered all over with horizontal hairs.

M. arvensis. *Linn. Sp. Pl. 806. Wild. v. 3. 80. Sm. Tr. of Linn. Soc. v. 5. 213. Fl. Br. 623. Engl. Bot. v. 30. t. 2119. Hull 173. Sole Menth. 29. t. 12. Hook. Scot. 181. Fl. Dan. t. 512. Ehrh. Pl. Off. 416.*

M. n. 5. Linn. Hort. Cliff. 307. Herb. Cliff.

M. verticillata hortensis, odore Ocymi; C. B. Pin. *Herb. Cliff.* but not of Bauhin.

M. n. 223. Hall. Hist. v. 1. 98; excluding the reference to Rivinus.

M. aquatica. *Raii Syn. ed.* 1. 78.

M. seu Calamintha aquatica. *Raii Syn. ed.* 2. 123. *ed.* 3. 232.

M. arvensis humilior verticillata hirsuta. *Moris. v.* 3. 369. *sect.* 11. *t.* 7. *f.* 5.

Calamintha aquatica. *How Phyt.* 18. *Merr. Pin.* 18. *Ger. Em.* 684. *f.* *Matth. Valgr. v.* 2. 78. *f.* *Camer. Epit.* 483. *f.*

Water Whirl Mint. *Pet. H. Brit. t.* 31. *f.* 5.

β. *Mentha arvensis major*, verticillis et floribus amplis, foliis latioribus, staminibus corollâ longioribus, odore grato. *Sole Menth.* 29, γ.

γ. *M. præcox*. *Sole Menth.* 31. *t.* 13. *Hull ed.* 1. 128.

δ. *M. gentilis*. *Mill. Dict. ed.* 8. *n.* 15. *From the author's herb.*

M. verticillata, rotundiore folio, odore Ocymi. *S. Dale Ms.*

M. verticillata glabra, foliis ex rotunditate acuminatis; Buddle. *In his own, as well as Bobart's, herbarium.*

M. arvensis verticillata, folio rotundiore, odore aromatico; Vernon. *Raii Syn. ed.* 2. 123. *ed.* 3. 232.

In sandy corn-fields frequent, especially where water has stagnated.

β. In moist meadows. *Mr. Sole.*

γ. On the banks of rivers. *Mr. Sole.*

δ. On the right hand of the road from Bocking to Gossfield, Essex. *Dale.* Found by Mr. Wigmores at Shelford, Cambridgeshire. *Ray.* In Prestwick Car, Northumberland. *Mr. Winch.*

Perennial. *June—September.*

Root creeping extensively. *Herb* of a pale hoary green, more or less hairy, with a strong unpleasant odour, like cheese covered with blue mould. Haller calls it detestable. *Stem* generally weighed down with its numerous branches; in γ more upright. *Leaves* stalked, ovate, or somewhat elliptical, bluntish, variously serrated, tolerably even, not wrinkled or rugged. *Whorls* of numerous, nearly sessile flowers. *Flower-stalks* simple, round, purplish at the upper part, often quite smooth, sometimes variously hairy, the hairs scattered, slightly reflexed, always most abundant near the top, or crowded under the calyx, as is common in this genus. *Bracteas* lanceolate, small; hairy beneath. *Calyx* short, bell-shaped, slightly furrowed, covered with resinous dots, and with longish, horizontally spreading, hairs. *Cor.* pale blueish purple, externally hairy. *Stam.* prominent in general, but not invariably; in γ and δ short.

The peculiarly short bell-shaped *calyx*, with its horizontal hairs, clearly distinguish this species from all the foregoing.

β is a larger more upright variety, with a sweetish smell. γ, the *præcox* of Sole, is also erect, with elliptical leaves, more shining and less evidently hairy; δ has the odour of Sweet Basil, which Mr. S. Dale's old original specimens still retain. In shape and characters it nearly agrees with the common kind. Jacquin's *M. austriaca*, *Fl. Austr. t.* 430, looks like a starved plant of Mr. Sole's *præcox*, my γ, but nothing certain can be made out from

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the figure. *M. lapponica*, *Wahlenb. Lapp.* 161. t. 10, comes very near to *præcox*.

12. *M. agrestis*. Rugged Field Mint.

Flowers whorled. Leaves somewhat heart-shaped, strongly serrated, rugose. Stem erect. Calyx bell-shaped, covered all over with horizontal hairs.

M. agrestis. *Sole Menth.* 33. t. 14. *Comp. ed.* 4. 101. *Engl. Bot.* v. 30. t. 2120.

M. arvensis ε . *Sm. Tr. of Linn. Soc.* v. 5. 213, 216. *Fl. Br.* 624.

In corn-fields and neglected gardens.

About the Mendip hills, Shepton-Mallet, and Frome, Somersetshire, abundantly. *Mr. Sole*. Very common in Sussex. *Mr. Borrer*.

Perennial. *August, September*.

Whether this be a distinct species or not, I will not dare to assert, nor do I know any person competent to decide the question. It has remained unchanged in my garden for 25 years, though almost naturalized, and frequently removed. It is a larger more hairy plant than *M. arvensis*, of a darker green, with an upright copiously branched stem, whose hairs are deflexed. Leaves ovate-heart-shaped, rugged, or somewhat plaited, coarsely serrated. Inflorescence, flower-stalks and calyx, as well as corolla, not materially different from the last, of which, if I were guided solely by my own principles, founded on the calyx and flower-stalks, I should make it a variety.

13. *M. Pulegium*. Penny-royal.

Flowers whorled. Leaves ovate. Stem prostrate. Flower-stalks and calyx all over downy; teeth fringed.

M. Pulegium. *Linn. Sp. Pl.* 807. *Willd.* v. 3. 82. *Sm. Tr. of Linn. Soc.* v. 5. 216. *Fl. Br.* 624. *Engl. Bot.* v. 15. t. 1026. *Hook. Scot.* 181. *Woodv.* t. 171. *Sole Menth.* 51. t. 23.

M. n. 221. *Hall. Hist.* v. 1. 97.

Pulegium. *Raii Syn.* 235. *How Phyt.* 99. *Bauh. Hist.* v. 3. p. 2. 256. f. *Fuchs. Hist.* 198. f. *Brunf. Herb.* v. 1. 227. f. *Matth. Valgr.* v. 2. 65. f. *Camer. Epit.* 471. f. *Riv. Monop. Irr.* t. 23. f. 1.

P. regium. *Ger. Em.* 671. f. *Merr. Pin.* 99.

On wet commons, and about the margins of small brooks.

Perennial. *September*.

Much smaller than any of the foregoing species, with a strong, acrid, very peculiar smell, resembling *Thymus Nepeta*. The stems are somewhat procumbent, or quite prostrate, downy, bluntly quadrangular, throwing out radicles here and there. Leaves scarcely half an inch long, often much less, stalked, deflexed, ovate, obtuse, with a few shallow unequal serratures,

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full of pellucid dots, and a little hairy chiefly beneath. *Whorls* sessile, numerous, many-flowered, large in proportion to the foliage. *Bractes* none. *Flower-stalks* purplish, clothed entirely with very short, dense, hoary pubescence. *Cal.* tubular, slender, nearly cylindrical, besprinkled with resinous dots, strongly ribbed and furrowed, covered with very short, dense, prominent hairs; the teeth unequal, sharp-pointed, fringed; mouth closed with converging white hairs, as in *Thymus*. *Cor.* externally hairy, light purple, occasionally white, exactly answering to the character of *Mentha*, as well as the *stamens*.

Penny-royal is a popular remedy for many obstructions, as well as for debility of the internal organs, being powerfully stimulant and tonic, but less grateful than Pepper Mint.

288. GLECHOMA. Ground-ivy.

Linn. Gen. 291. *Juss.* 113. *Fl. Br.* 625. *Lam. t.* 505.

Cal. tubular, cylindrical, striated, permanent, with 5 pointed, unequal, marginal teeth. *Cor.* ringent; tube slender, compressed; upper lip erect, obtuse, cloven half way down; lower larger, in 3 spreading obtuse segments, the middle one broadest, cloven. *Filam.* under the upper lip. *Anth.* of each pair converging in the form of a cross. *Germ.* superior, small, four-cleft. *Style* thread-shaped, curved under the upper lip. *Stigma* in 2 acute divisions. *Seeds* 4, ovate, in the bottom of the permanent calyx.

A small genus, of perennial, downy, somewhat aromatic, *herbs*; with heart-shaped, crenate, or serrated, *leaves*, and axillary *flowers*.

1. *G. hederacea*. Common Ground-ivy, Gill, or Ale-hoof.

Leaves kidney-heart-shaped, crenate.

G. hederacea. *Linn. Sp. Pl.* 807. *Willd. v.* 3. 85. *Fl. Br.* 625. *Engl. Bot. v.* 12. *t.* 853. *Curt. Lond. fasc.* 2. *t.* 44. *Mart. Rust. t.* 61. *Woodv. t.* 28. *Hook. Scot.* 181. *Fl. Dan. t.* 789. *Bull. Fr. t.* 241.

Chamæclema n. 245. *Hall. Hist. v.* 1. 107.

Ch. vulgare. *Vaill. Par.* 33. *t.* 6. *f.* 4, 5, 6.

Calamintha humilior, folio rotundiore. *Raii Syn.* 243.

Hedera terrestris. *Brunf. Herb. v.* 1. 167. *f. Ger. Em.* 856. *f. Matth. Valgr. v.* 1. 574. *f. Camer. Epit.* 400, 401. *f, f. Riv. Monop. Irr. t.* 67. *f.* 1, 2.

Chamæcissos. *Trag. Hist.* 799. *f. Fuchs. Hist.* 876. *f.*

In dry shady places, by road sides and about hedge banks, common.

90 DIDYNAMIA—GYMNOSPERMIA. *Lamium*.

Perennial. *April, May.*

Herb downy, with an agreeable fragrance. *Roots* creeping, with long leafy runners. *Stems* leafy, more or less ascending, unbranched, their hairs bent downwards. *Leaves* stalked, about an inch wide, bluntly crenate, veiny; paler beneath, with abundance of small resinous dots, yielding an aromatic oil. *Fl.* blue, with a white palate, about 6 in each whorl.

Few perennial herbs vary so much in size; and hence authors have formerly made several species. The extremes may be seen in the plates of Rivinus and Vaillant.

289. LAMIUM. - Dead-nettle.

Linn. Gen. 292. *Juss.* 113. *Fl. Br.* 626. *Sm. in Rees's Cycl.* v. 20. *Tourn.* t. 85. *Lam.* t. 506.

Cal. tubular, dilated upwards, with 5 nearly equal, awned teeth, permanent. *Cor.* ringent; tube cylindrical, short; limb gaping; throat inflated, compressed, gibbous, bordered at each side with one or more little reflexed teeth; upper lip vaulted, roundish, obtuse, undivided or cloven; lower shorter, inversely heart-shaped, notched, more or less reflexed. *Filam.* awl-shaped, covered by the upper lip. *Anth.* incumbent, oblong, bivalve, hairy. *Germ.* superior, four-cleft. *Style* thread-shaped, of the length and situation of the stamens. *Stigma* in 2 acute spreading segments. *Seeds* 4, level-topped, short, triangular, convex at one side, abrupt at each end, in the bottom of the open-mouthed calyx.

Perennial, or annual, European herbs, of which 20 species are described in the *Cyclopædia*. *Leaves* heart-shaped, mostly serrated and downy. *Fl.* scentless, numerous, large, whorled, red, purplish, or white; never yellow.

1. *L. album*. White Dead-nettle, or Archangel.

Leaves heart-shaped, pointed, strongly serrated, hairy. *Flowers* about twenty in a whorl. *Tube* of the calyx shorter than its teeth. *Upper lip* of the corolla notched; *lateral teeth* solitary, lanceolate.

L. album. *Linn. Sp. Pl.* 809. *Willd.* v. 3. 88. *Fl. Br.* 626. *Engl. Bot.* v. 11. t. 768. *Curt. Lond. fasc.* 2. t. 45. *Mart. Rust.* t. 26. *Hook. Scot.* 181. *Ehrh. Pl. Off.* 195. *Fl. Dan.* t. 594. *Bull. Fr.* t. 213. *Raii Syn.* 240. *Ger. Em.* 702. f.

L. n. 271. *Hall. Hist.* v. 1. 118.

L. Plinii. *Matth. Valgr.* v. 2. 473. f.

L. sive Archangelica, flore albo. *Lob. Ic.* 520. f.

Galeopsis. *Riv. Monop. Irr. t. 62. f. 1.*

In waste ground, the borders of fields, and by road sides, common.
Perennial. *May, June; also September.*

Root creeping. *Stems* erect, 12 or 18 inches high, roughish with short deflexed hairs. *Leaves* deep green, unspotted, strongly serrated, stalked, veiny, hairy. *Fl.* large, white, rarely tinged with a blush-colour, hairy; lip cream-coloured. *Anth.* black. The herbage is scarcely eaten by cattle, and has a slightly fetid scent. The flowers abound with honey.

2. *L. maculatum*. Spotted Dead-nettle.

Leaves heart-shaped, pointed, strongly serrated, hairy.
Flowers about ten in a whorl. Tube of the calyx curved, as long as its teeth. Upper lip of the corolla notched; lateral teeth solitary, bristle-shaped.

L. maculatum. *Linn. Sp. Pl.* 809. *Willd. v. 3.* 87. *Comp. ed.* 4. 102. *Engl. Bot. v. 36. t.* 2550. *Cyclop. n. 5.* *Hook. Scot.* 181. *Ait. Hort. Kew. ed. 2. v. 3.* 393. *Ehrh. Pl. Off.* 426. *Bauh. Pin.* 231.

L. n. 270. *Hall. Hist. v. 1.* 118.

L. purpureum foetidum, folio parvo, acuminato, flore majore. *Pluk. Almag.* 204. *Phyt. t.* 198. *f. 1.*

Urtica mortua alia divaricata, et guttatim dispersa. *Column. Ecphr.* 191.

On banks in warm situations, rare; perhaps a naturalized plant.

In a lane near Redland Court, not far from Bristol. *Mrs. Vaughan.*

Once found at Bayswater, near London. In woods in Scotland, but rare. *Mr. G. Don.*

Perennial. *April.*

Habit like the preceding, from which however this species is truly distinct. The *leaves* are marked, either with a white central line, or with scattered white spots. *Fl.* crimson; the lip beautifully speckled; their lateral teeth slender. *Cal.* very unlike that of *L. album*; the tube more slender and curved, as long as the teeth, which are also recurved and narrow, mostly purplish. Authors have greatly confounded the synonyms of this *Lamium*. Haller took it for the *laevigatum*, and Pallas, more unaccountably, for the *purpureum*, of Linnæus. Rivinus did not distinguish it, as a species, from *album*. As to blunders in compiling, quoting and copying, they are peculiarly numerous throughout its whole history. The editor of J. Bauhin's *Hist. v. 3.* 322, has actually given for this plant an old figure of the Almond, from Dorstenius, p. 24. Ours is the plant of Haller and Rivinus, the *leaves* being only slightly dotted. It scarcely seems specifically distinct from that with a white line.

3. *L. purpureum*. Red Dead-nettle, or Archangel.

Leaves heart-shaped, bluntish, unequally crenate, stalked; the upper ones crowded. Stem leafless in the middle. Calyx-teeth lanceolate. Tube of the corolla closed, near the bottom, with hairs.

L. purpureum. *Linn. Sp. Pl.* 809. *Willd. v.* 3. 88. *Fl. Br.* 627. *Engl. Bot. v.* 11. *t.* 769. *Curt. Lond. fasc.* 1. *t.* 42. *Mart. Rust. t.* 25. *Hook. Scot.* 182. *Fl. Dan. t.* 523. *Ehrh. Pl. Off.* 436.

L. n. 272. *Hall. Hist. v.* 1. 118.

L. rubrum. *Raii Syn.* 240. *Ger. Em.* 703. *f.*

Urtica non mordax, vulgaris fœtens purpurea. *Lob. Ic.* 520. *f.*

Galeopsis purpurea. *Dalech. Hist.* 1248. *f.*

G. minor. *Riv. Monop. Irr. t.* 62. *f.* 2.

β. *Lamium rubrum*, foliis per ambitum nec serratis nec crenatis.
Prof. Martyn Ms.

In waste as well as cultivated ground every where.

β. Near Sudbury. *Mr. Joseph Andrews.*

Annual. *May.*

Root fibrous, slender very tough. Whole plant but half the size of the first species. Stems weak, curved and reclining at the bottom, with a few short leafy branches; then erect, rough-edged; naked in the middle; densely leafy at the top. Leaves stalked, deflexed, broadly heart-shaped, not pointed, unequally crenate, hairy, veiny, unpleasantly scented. Fl. many in each whorl, purplish-red, with 2 short teeth at each side, and a deeper-coloured spotted lip; the tube lined, just above its base, with a dense circle of hairs, first noticed by Mr. J. D. Sowerby, and delineated in *Engl. Bot. t.* 1933, at the bottom. Pollen the colour of red lead.

β. has the margins of the leaves quite entire; but it seems a mere variety, and is certainly distinct from my *L. ocymifolium*, *R. Cyclop. n.* 14, an American species, naturalized in Chelsea garden.

4. *L. incisum*. Cut-leaved Dead-nettle, or Archangel.

Leaves heart-shaped, dilated, stalked, irregularly cut; the upper ones crowded. Stem leafless in the middle. Tube of the corolla internally naked; marginal teeth dilated, combined.

L. incisum. *Willd. Sp. Pl. v.* 3. 89. *Engl. Bot. v.* 27. *t.* 1933. *Comp. ed.* 4. 102. *Hook. Scot.* 182.

L. dissectum. *With.* 527. *Hull.* 132. *Sym.* 136.

L. purpureum β. *Fl. Br.* 627. *Huds.* 255. *Relh.* 231.

L. rubrum minus, foliis profundè incisis. *Raii Syn.* 240. *Pluk. Almag.* 204. *Phyt. t.* 41. *f.* 3.

Ballote crispa major. *Dalech. Hist.* 1253. *f.*

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Red Cut-leaved Archangel. *Pet. H. Brit. t. 33. f. 3.*

In cultivated or waste ground, with the preceding, but far less common.

Frequent about Saxmundham, Suffolk.

Annual. *May.*

Like the last in habit, but rather smaller; the *leaves* deeply and irregularly cut. *Corolla* of a brighter red; the bottom of the tube pervious and naked; the marginal teeth broad, prominent and confluent. I conceive it to be, by these characters, which I have often verified, a truly distinct species, related to the foregoing, as well as to the following, but not a mule variety, as it ripens plenty of seeds.

5. *L. amplexicaule*. Great Henbit. Henbit Dead-nettle.

Floral leaves sessile, kidney-shaped, obtuse, deeply crenate, partly lobed, clasping the stem. Teeth of the calyx linear-awl-shaped, as long as its tube.

L. amplexicaule. *Linn. Sp. Pl.* 809. *Willd. v. 3.* 90. *Fl. Br.* 627. *Engl. Bot. v. 11. t. 770.* *Curt. Lond. fasc. 2. t. 46.* *Hook. Scot.* 182. *Fl. Dan. t. 752.*

L. n. 273. *Hall. Hist. v. 1.* 119.

L. folio caulem ambiente, majus et minus. *Raii Syn.* 240.

Galeopsis folio caulem ambiente, major et minor. *Riv. Monop. Irr. t. 63.*

Alsine Hederula altera. *Ger. Em.* 616. *f.*

Morsus Gallinæ, folio hederulæ, alter. *Lob. Ic.* 463. *f.*

Ballote crispa. *Dalech. Hist.* 1253. *f.*

In sandy fields.

Annual. *February—June.*

Habit similar to the two last. *Stems* reclining, nearly smooth.

Lower leaves stalked, heart-shaped, strongly crenate; upper sessile, surrounding the stem, broadly and deeply crenate, or lobed; all somewhat hairy. *Fl.* numerous, in sessile axillary whorls. *Cal.* very hairy, with long taper teeth. *Cor.* with a long slender tube; upper lip downy, of a beautiful crimson; lower paler, spotted; lateral teeth simple and broad. *Seeds* dotted with white. The early *flowers* have an abortive *corolla*, which never expands; but their *seeds* are fertile.

290. GALEOPSIS. Hemp-nettle.

Linn. Gen. 292. *Juss.* 114. *Fl. Br.* 628. *Lam. t.* 506.

Tetrahit. *Dill. Gen.* 103. *t. 3, 4 E.*

Cal. tubular, with 5 spreading, spinous-tipped teeth, as long as the tube, permanent. *Cor.* ringent; tube slender

at the base, dilated upwards into a wide throat, longer than the calyx, marked in front, at the base of the lower lip, with 2 prominences, hollow underneath; upper lip roundish, vaulted, serrated at the extremity; lower in 3 deep lobes; the lateral ones roundish; the central one largest, cloven and notched. *Filam.* awl-shaped, covered by the upper lip. *Anth.* roundish, bivalve. *Germ.* superior, 4-lobed. *Style* thread-shaped, of the length and situation of the stamens. *Stigma* in 2 acute, spreading segments. *Seeds* 4, triangular, convex at the summit, in the bottom of the rigid, spinous, open-mouthed calyx.

Annual, hairy or finely downy, not aromatic, herbs, with branched upright *stems*, serrated, ovate, or lanceolate, stalked *leaves*, and large, handsome, parti-coloured *flowers*, numerous whorled.

1. *G. Ladanum.* Red Hemp-nettle.

Stem not swelled below the joints. Leaves lanceolate, somewhat serrated, hairy. Upper lip of the corolla slightly notched.

G. Ladanum. *Linn. Sp. Pl.* 810. *Willd. v. 3.* 91. *Fl. Br.* 628. *Engl. Bot. v. 13. t.* 884. *Hook. Scot.* 182.

G. angustifolia. *Ehrh. Herb.* 137; the narrow-leaved variety.

G. n. 266. *Hall. Hist. v. 1.* 117.

Sideritis arvensis rubra. *Raii Syn.* 242.

Ladanum segetum. *Dalech. Hist.* 443. *f. Riv. Monop. Irr. t.* 24. *f. 1.*

L. segetum, flore rubro. *Bauh. Hist. v. 3. p. 2.* 839. *f.*

Narrow Iron Wort. *Pet. H. Brit. t.* 33. *f. 11.*

β . Calyx very hairy. Stem thickened upwards. *With.* 528; *var. 2.*

In dry gravelly or chalky corn-fields, or on limestone rubbish.

Annual. *August, September.*

Root twisted, or zigzag, with many fibres. *Stem* a foot high, erect, with several opposite branches crossing each other in pairs, leafy, red, roughish with deflexed hairs, the interstices of an even thickness throughout. *Leaves* spreading, lanceolate, or somewhat ovate, hairy, distantly serrated; sometimes partly entire, and almost linear; furrowed on the upper side along the veins, which are prominent beneath. *Fl.* in dense whorls, the terminal whorl largest. *Cal.* bell-shaped, variously hairy, often viscid. *Cor.* rose-coloured, variegated with crimson and white; upper lip slightly crenate.

The terminal *flower* has sometimes 4 regular segments, with equal *stamens*, according to the Rev. R. Forby.

This species is remarkably variable in the foliage, and in the hairi-

ness of the *calyx*. I can form no conclusive opinion of the supposed variety β , which I have never seen.

2. *G. villosa*. Downy Hemp-nettle.

Stem not swelled below the joints. Leaves ovate-lanceolate, serrated, very soft and downy. Upper lip of the corolla deeply notched.

G. villosa. Huds. 256. Fl. Br. 629. Engl. Bot. v. 33. t. 2353. Dicks. H. Sicc. fasc. 10. 15.

G. grandiflora. Willd. Sp. Pl. v. 3. 91. With. 528.

G. latifolia. Ehrh. Herb. 147.

G. n. 267. Hall. Hist. v. 1. 117.

Betonica hirta. Huds. ed. 1. 220; not of Linnæus.

Sideritis arvensis latifolia hirsuta lutea. Raii Syn. 242.

Ladanum segetum, folio latiore. Riv. Monop. Irr. t. 24. f. 2.

Yellow Iron Wort. Pet. H. Brit. t. 33. f. 10.

β . *Cannabis spuria, flore albo magno, staminibus luteis*. Merr. Pin. 19.

In sandy corn-fields, not common.

Frequent in Yorkshire and Lancashire; near Newark, Nottinghamshire; and about Bangor in Wales. Hudson, from whom I have a wild specimen.

Annual. July, August.

Larger and paler than the foregoing. Leaves ovate, all equally and regularly serrated, furrowed, clothed with a soft, velvet-like downiness, especially beneath, which distinguishes this species from every other. Cal. densely shaggy. Cor. large, of an elegant pale sulphur-colour, with a yellow palate, and blueish upper lip, which is cloven and sharply notched. β seems but a slight variety.

3. *G. Tetrahit*. Common Hemp-nettle.

Stem bristly; swelled below the joints. Corolla twice the length of the calyx; upper lip nearly straight.

G. Tetrahit. Linn. Sp. Pl. 810. Willd. v. 3. 92. Fl. Br. 629. Engl. Bot. v. 3. t. 207. Hook. Scot. 182. Fl. Dan. t. 1271.

G. n. 268. Hall. Hist. v. 1. 117.

Lamium cannabino folio vulgare. Raii Syn. 240.

Cannabis spuria. Ger. Em. 709. f. Riv. Monop. Irr. t. 31.

Urtica iners quarta. Dod. Pempt. 153. f.

In cultivated ground frequent.

Annual. July, August.

Stem $1\frac{1}{2}$ or 2 feet high, leafy, rough with copious, deflexed, very sharp, prickly bristles; branches opposite, spreading widely; spaces between the joints, particularly the lower ones, much

swelled upwards. *Leaves* ovate, large, dark green, acute, coarsely serrated, closely hairy on both sides, strongly scented when bruised, but not aromatic. *Fl.* numerous, in many dense whorls. *Cal.* with long sharp teeth, and a bristly tube. *Cor.* about twice the length of the calyx; tube slender, white; upper lip nearly straight, but slightly convex, purple, crenate, not cloven; lower about equally 3-lobed, variegated with white and purple, with dark lines in the middle.

The *flowers* vary somewhat in size and colour, being occasionally quite white. The terminal one of all is now and then regular, with 4 equal *stamens*, first observed in 1788, at Matlock, as recorded in *Linn. Fl. Lapp. ed. 2.* 201.

4. *G. versicolor*. Large-flowered Hemp-nettle. Bee Nettle.

Stem bristly; swelled below the joints. Corolla thrice the length of the calyx; upper lip tumid; middle lobe of the lower heart-shaped.

G. versicolor. *Curt. Lond. fasc. 6. t. 38. Fl. Br. 630. Engl. Bot. v. 10. t. 667. Hook. Scot. 182. Winch Guide v. 1. 56. Purton v. 3. 565.*

G. cannabina. *Willd. Sp. Pl. v. 3. 93. Pollich v. 2. 148. Fl. Dan. t. 929.*

G. Tetrahit β. *Linn. Sp. Pl. 810. Lightf. 310. Huds. δ. 257.*

G. n. 269. Hall. Hist. v. 1. 117.

Lamium cannabinum folio, flore amplo luteo, labio purpureo. Raii Syn. 241.

L. cannabinum aculeatum, flore specioso luteo, labiis purpureis. Pluk. Almag. 204. Phyt. t. 41. f. 4; bad.

Cannabis spuria, flore majore. Riv. Monop. Irr. t. 32.

C. spuria angustifolia, variegato flore. Barrel. Ic. t. 1158.

β. *Lamium cannabinum, floribus albis, verticillis purpurascens. Raii Syn. 241.*

γ. *Cannabis spuria, flore albo magno eleganti. Merr. Pin. 19. Dill. in Raii Syn. 240.*

In sandy corn-fields.

Not rare in the north of England or in Norfolk. I have observed it also at Moffat and near Edinburgh; as Sir T. G. Cullum did very abundantly at Gretna Green.

Annual. *July, August.*

Like the last in general habit, but with paler and broader *leaves*. *Fl.* much larger, yellow, with red or orange marks on the palate, the 2 protuberances in front much more considerable; the middle segment of the lower lip inversely heart-shaped, purple, bordered with white; upper lip broad, convex, very hairy, copiously notched.

This is doubtless a distinct species, propagating itself by seed un-

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altered, and very abundantly. Of the varieties I know nothing but from Ray's *Synopsis*. Doody's account of β rather indicates its belonging to this species than to the former.

291. GALEOBDOLON. Weasel-snout.

Huds. 257. *Fl. Br.* 631. *Dill. Gen.* 103. *t.* 4.

Galeopsis. *Linn. Gen.* 292. *Juss.* 114.

Cal. tubular, bell-shaped, permanent, with 5 spreading, unequal, spinous-tipped teeth, shorter than the tube; the upper one erect, at some distance from the rest. *Cor.* ringent; tube cylindrical, the length of the calyx; upper lip oval, vaulted, hairy, entire, fringed; lower shorter, in 3 oblong, acute, rather unequal, undivided segments, the middle one longest. *Filam.* awl-shaped, covered by the upper lip. *Anth.* of 2 roundish lobes. *Germ.* superior, 4-lobed. *Style* thread-shaped, the length and situation of the stamens. *Stigma* in 2 acute spreading segments. *Seeds* 4, short, triangular, abrupt, in the bottom of the open-mouthed calyx.

Herbaceous, perennial, resembling a *Lamium*, with yellow flowers.

1. *G. luteum*. Yellow Weasel-snout. Yellow Archangel.

G. luteum. *Huds.* 258. *Fl. Br.* 631. *Engl. Bot. v.* 11. *t.* 787. *With.* 530. *Hook. Scot.* 183.

G. Galeopsis. *Curt. Lond. fasc.* 4. *t.* 40.

Galeopsis Galeobdolon. *Linn. Sp. Pl.* 810. *Dreves Bilderb. t.* 20. *Fl. Dan. t.* 1272.

Leonurus Galeobdolon. *Scop. Carn. v.* 1. 409. *Willd. Sp. Pl. v.* 3. 115.

Cardiaca n. 275. *Hall. Hist. v.* 1. 120.

Lamium luteum. *Raii Syn.* 240. *Ger. Em.* 702. *f.* *Riv. Monop. Irr. t.* 20. *f.* 2.

Yellow Archangel. *Pet. H. Brit. t.* 33. *f.* 6.

In shady rather moist situations, in groves or hedge-bottoms, not uncommon.

Perennial. *May.*

Root somewhat tuberous, moderately creeping. *Habit* very like *Lamium album*, and not at all resembling any *Leonurus* or *Galeopsis*. *Stems* 18 inches high, simple, leafy, covered with close deflexed hairs. *Leaves* stalked, ovate, acute, serrated, slightly hairy, bright green, various in breadth. *Whorls* numerous, each composed of many large, handsome, inodorous, yellow flowers, whose lower lip is spotted with red, the middle segment stained with orange colour. *Bractees* linear, shorter, than the *calyx*.

292. BETONICA. Betony.

Linn. Gen. 293. *Juss.* 114. *Fl. Br.* 632. *Tourn. t.* 96. *Lam. t.* 507

Cal. tubular, cylindrical, permanent, with 5 nearly equal, spinous-tipped teeth, shorter than the tube. *Cor.* ringent; tube cylindrical, incurved; upper lip roundish, undivided, almost flat, erect; lower longer, in 3 deep segments, the middle one broadest, roundish, notched. *Filam.* awl-shaped, scarcely projecting beyond the throat, and turned towards the upper lip. *Anth.* almost orbicular. *Germ.* rounded, 4-lobed. *Style* thread-shaped, the length and situation of the stamens. *Stigma* cloven, acute. *Seeds* 4, ovate, in the bottom of the smooth, somewhat converging, calyx.

Herbaceous, unbranched, hairy, with oblong, stalked, copiously and uniformly serrated, or crenate, *leaves*. *Fl.* crimson, purplish, or yellowish, in solitary, terminal, dense, upright, whorled *spikes*.

1. *B. officinalis*. Wood Betony.

Spike interrupted. Middle segment of the lower lip notched.

B. officinalis. *Linn. Sp. Pl.* 810. *Willd. v.* 3. 93. *Fl. Br.* 632. *Engl. Bot. v.* 16. *t.* 1142. *Curt. Lond. fasc.* 3. *t.* 33. *Woodv. suppl. t.* 241. *Hook. Scot.* 183. *Fl. Dan. t.* 726. *Bull. Fr. t.* 41.

B. n. 264. *Hall. Hist. v.* 1. 116.

Betonica. *Raii Syn.* 238. *Ger. Em.* 714. *f.* *Dorst. Bot.* 38, 2. *f.* *Brunf. Herb. v.* 1. 88. *f.* *Fuchs. Hist.* 350. *f.* *Camer. Epit.* 681. *f.* *Riv. Monop. Irr. t.* 28.

In woods and thickets.

Perennial. *July, August.*

Root rather woody. *Stem* leafy, rough with reversed bristles. *Leaves* oblong, with numerous, strong, bluntish serratures; the lowermost on long stalks. *Fl.* crimson, rarely white, forming a dense *spike*, various in length; the lowest *whorl* a little remote, with a pair of small sessile leaves beneath. *Bracteas* purplish, lanceolate, entire. Lower lip of the *corolla* more or less notched, or slightly cloven.

This herb is scarcely aromatic, but the fine rigid hairs, which cover the surface, cause it when powdered to produce sneezing. Hence Betony is generally made an ingredient in herb snuffs. The *root* is said to be emetic and purgative.

293. STACHYS. Woundwort.

Linn. Gen. 293. *Juss.* 114. *Fl. Br.* 632. *Tourn. t.* 86. *Lam. t.* 509. *Galeopsis.* *Tourn. t.* 86.

Cal. tubular, angular, with 5 spreading, more or less unequal, spinous-pointed teeth, hardly so long as the tube, permanent. *Cor.* ringent; tube very short; throat oblong, protuberant underneath at the base; upper lip erect, ovate, vaulted, often notched; lower larger, 3-lobed, the lateral lobes reflexed, the middle one largest, notched. *Filam.* awl-shaped, rather shorter than the upper lip, finally curved outwards, at each side of the mouth. *Anth.* roundish, of 2 valves. *Germ.* angular, 4-lobed. *Style* the length and position of the stamens. *Stigma* cloven, acute. *Seeds* 4, angular, abrupt, in the bottom of the scarcely altered calyx.

Hairy, shaggy, or woolly, rather fetid herbs, sometimes shrubby, rarely annual. *Leaves* heart-shaped, ovate, or oblong, serrated or crenate. *Whorls* numerous, generally spiked; leafy or bracteated. *Fl.* reddish, or blueish, variously speckled about the mouth.

1. *S. sylvatica.* Hedge Woundwort.

Six flowers in a whorl. Leaves heart-shaped, stalked. Stem solid.

S. sylvatica. Linn. *Sp. Pl.* 811. Willd. v. 3. 97. Fl. Br. 633. Engl. Bot. v. 6. t. 416. Curt. Lond. fasc. 3. t. 34. Hook. Scot. 183. Riv. Monop. Irr. t. 26. f. 2.

Cardiaca n. 276. Hall. Hist. v. 1. 120.

Galeopsis legitima Dioscoridis. Raii Syn. 237. Clus. Hist. v. 2. 35. f. 36

G. vera. Ger. Fm. 704. f.

β. *Lamium sylvaticum spicatum foetidum*, folio anguloso, minus. Pluk. Amalth. 128. Dill. in Raii Syn. 237.

Under hedges, and in shady situations, common.

Perennial. July, August.

Root moderately creeping. *Herb* dark green, hairy all over, with a strong disagreeable smell. *Stem* 2 or 3 feet high, erect, leafy, not much branched, filled with pith. *Leaves* stalked, broadly heart-shaped, acute, serrated, veiny, thin and pliant; the upper ones gradually diminishing to sessile, linear, entire *bracteas*. *Fl.* externally downy, dull red, or dusky blood-coloured; the palate prettily variegated with darker lines and spots, mixed with white. The *tube* has a small pouch underneath, marking the limits of the long and cylindrical throat.

2. *S. ambigua.* Ambiguous Woundwort.

Six flowers in a whorl. Leaves oblong, stalked; heart-shaped at the base. Stem hollow.

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S. ambigua. *Engl. Bot.* v. 30. t. 2089. *Comp. ed.* 4. 103. *Hook. Scot.* 183.

In waste as well as cultivated ground, chiefly in Scotland.

In potatoe fields in the Orkneys, also in Ross-shire. *Prof. Hooker and Mr. Borrer.* Near Edinburgh. *Mr. G. Don.* At the foot of the Pentland hills. *Mr. Weatherhead.* About Inverary. *Mr. Maughan.* By the London road about a furlong north of Quorn-don, also at Sheepshead, Leicestershire. *Rev. W. Parkinson.*

Perennial. *August, September.*

Root white, creeping. *Herbage* much less fetid, of a lighter green, and more silky than the preceding. *Stem* hollow. *Leaves* oblong, acute, serrated, slightly heart-shaped, but not rounded, at the base. *Fl.* red, brighter and more crimson than those of *S. sylvatica*; the palate more or less variegated with white and dark purple; upper lip very hairy. This seems an intermediate species with regard to the preceding and the following.

3. *S. palustris.* Marsh Woundwort.

Six to ten flowers in a whorl. Leaves linear-lanceolate, half embracing the stem. Root tuberous.

S. palustris. *Linn. Sp. Pl.* 811. *Willd. v.* 3. 98. *Fl. Br.* 633. *Engl. Bot.* v. 24. t. 1675. *Curt. Lond. fasc.* 3. t. 35. *Hook. Scot.* 183. *Ehrh. Pl. Off.* 446. *Riv. Monop. Irr. t.* 26. f. 1.

S. n. 257. *Hall. Hist. v.* 1. 113.

Sideritis anglica, strumosâ radice. *Raii Syn.* 242.

Lysimachia hirsuta purpurea, flore galericulato. *Loes. Pruss.* 156. t. 41.

Panax coloni. *Ger. Em.* 1005. f.

Clymenum minus. *Dalech. Hist.* 1357. f.

In wet hedges and fields, and about the banks of ditches and rivers, very common.

Perennial. *August.*

Root creeping extensively, fleshy, throwing out in autumn a number of tuberous shoots, which render it, in low wet ground, very difficult of extirpation. This therefore should be attempted in summer, before these knobs are produced, when the flowers are just appearing. The herbage is fetid, greyish and silky. *Stems* very erect, rough with deflexed bristles, bearing many pairs of long, narrow, serrated, almost sessile leaves, somewhat woolly beneath, whose rounded bases embrace the stem. *Fl.* light purple, variegated with violet and white, forming many whorls, disposed in a lax spike, each whorl accompanied by a pair of small deflexed leaves.

Gerarde celebrates this herb as a vulnerary, and his whole account of its virtues is worth reading for amusement, if not instruction.

4. *S. germanica*. Downy Woundwort.

Many flowers in a whorl. Leaves crenate, densely silky; woolly beneath. Stem woolly, erect.

S. germanica. Linn. *Sp. Pl.* 812. Willd. v. 3. 99. *Fl. Br.* 634.

Engl. Bot. v. 12. t. 829. *Fl. Dan.* t. 684. *Jacq. Austr.* t. 319.

S. n. 255. *Hall. Hist.* v. 1. 112.

Stachys. *Fuchs. Hist.* 766. f.

S. Fuchsii. *Raii Syn.* 239. *Ger. Em.* 695. f. *Bauh. Hist.* v. 3. p. 2. 319. f. 320.

S. montana. *Riv. Monop. Irr.* t. 27. f. 1.

S. alba latifolia major. *Barrel. Ic.* t. 297.

In fields, hedges, and by road sides, on a limestone soil, but rare. Chiefly confined to Oxfordshire and Bedfordshire. Frequent about Woodstock and Witney. The present Bishop of Carlisle observed it, in great plenty, in the corn-fields at Brizenorton; the Rev. Dr. Abbot on Luton downs, Bedfordshire; and the Rev. J. Hempsted on a hill 2 miles from Bedford.

Perennial. *September*.

Roots tufted. *Stems* quite erect, 2 feet high, leafy, unbranched, densely clothed with soft, white, woolly hairs pointing downward. *Leaves* stalked, ovate, acute, copiously crenate, reticulated with numerous veins; the upper side very thickly covered with white silky hairs; lower with close matted wool. *Whorls* numerous, many-flowered, axillary; the upper ones crowded into a leafy spike. *Bractees* and *calyx* very woolly. *Cor.* light purple; the upper lip cloven, shaggy; palate striped with white. *Seeds* oval, blackish, smooth.

5. *S. arvensis*. Corn Woundwort.

Six flowers in a whorl. Stem weak. Leaves heart-shaped, obtuse, crenate, slightly hairy.

S. arvensis. Linn. *Sp. Pl.* 814. Willd. v. 3. 106. *Fl. Br.* 634.

Engl. Bot. v. 17. t. 1154. *Curt. Lond. fasc.* 4. t. 41. *Hook. Scot.* 183. *Fl. Dan.* t. 587.

S. arvensis minima. *Riv. Monop. Irr.* t. 27. f. 2.

Trixago n. 231. *Hall. Hist.* v. 1. 101.

Sideritis humilis, lato obtuso folio. *Raii Syn.* 242.

Round Iron Wort. *Pet. H. Brit.* t. 33. f. 12.

In gravelly, sandy or chalky fields, very general.

Annual. *July, August*.

Root small, fibrous. *Herbage* green, slightly hairy. *Stem* branched, weak, recumbent, or ascending, either hairy or smooth. *Leaves* on short stalks, ovate, or slightly heart-shaped, bluntish, crenate, hardly an inch long; three-ribbed at the base. *Whorls* axillary, crowded towards the tops of the branches. *Cal.* hairy. *Cor.* small, light purple, with a white and spotted palate; its

structure perfectly that of a *Stachys*, though Haller thought otherwise. *Seeds* rounded externally; triangular at the inner side. The plant is slightly fetid, but has no remarkable quality.

294. *BALLOTA*. Black Horehound.

Linn. Gen. 294. *Juss.* 114. *Fl. Br.* 635. *Lam. t.* 508.

Ballote. Tourn. t. 85.

Cal. tubular, oblong, with 5 angles, 10 ribs, and 10 furrows, permanent; limb somewhat salver-shaped, dilated, spreading, plaited, regular, with 5 pointed teeth. *Cor.* ringent; tube cylindrical, the length of the calyx; upper lip erect, ovate, concave, notched; lower 3-lobed, obtuse, the central lobe largest, cloven. *Filam.* awl-shaped, directed towards the upper lip, which extends a little beyond them. *Anth.* oblong, of 2 spreading valves. *Germ.* small, 4-lobed. *Style* thread-shaped, of the length and situation of the stamens. *Stigma* cloven, slender. *Seeds* 4, ovate, in the bottom of the somewhat hardened calyx.

Herbaceous, downy, fetid. *Leaves* ovate or heart-shaped, serrated, or lobed. *Fl.* numerous, purplish, or white, in dense, stalked, bracteated whorls. Some of the foreign species are doubtful as to their generic character.

1. *B. nigra*. Stinking Black Horehound.

Leaves ovate, undivided, serrated. *Calyx* funnel-shaped, abrupt, with short spreading teeth.

B. nigra. Linn. Sp. Pl. ed. 1. 582. *Fl. Br.* 635. *Engl. Bot. v.* 1. t. 46. *Huds.* 260. *With.* 533. *Relh.* 234. *Sibth.* 187. *Abbot* 131. *Hook. Scot.* 184. *Bull. Fr. t.* 397.

Mentha aquatica. Fl. Dan. t. 673!

Ballotte. Raii Syn. 244.

Ballote. Fuchs. Hist. 154. f. *Matth. Valgr. v.* 2. 180. f. *Tourn. Inst.* 185. t. 85. *Vaill. Par.* 20.

Marrubium nigrum. Ger. Em. 701. f.

M. vulgare. Clus. Hist. v. 2. 34. f.

Stinking Horehound. *Pet. H. Brit. t.* 32. f. 4.

β. *Ballota alba. Linn. Sp. Pl. ed.* 2. 814. *Fl. Suec.* 206.

B. nigra β. *Huds.* 260. *With.* 533. *Relh.* 235.

B. flore albo. Tourn. Inst. 185. *Vaill. Par.* 20.

Ballote. Camer. Epit. 572. f.

About hedges and waste places common.

β. Near Hammersmith. *Mr. Woodward.* At Stafford. *Dr. Stokes.* At Weston-supra-mare, Somersetshire. *Mr. Lightfoot's herbarium.* Between Norwich and Hellesdon.

Perennial. *July, August.*

Whole herb finely hairy or downy, of a greyish green, with a pe-

culiar pungent and disagreeable scent. *Stem* 2 or 3 feet high, erect, branched, leafy, clothed with recurved hairs. *Leaves* stalked, an inch or more in length, ovate, or slightly heart-shaped, strongly and nearly equally serrated. *Whorls* all axillary, many-flowered, stalked, compound, bracteated, often accompanied by small leaves. *Bracteas* bristle-shaped, shorter than the calyx, fringed. *Cal.* cylindrical, hairy, with 10 furrows and as many ribs; the upper part dilated and funnel-shaped, with 5 very short, abrupt, veiny, marginal lobes or teeth, each tipped with a small spreading bristly point. *Cor.* dull purple, in β white; upper lip cloven, vaulted, externally clothed with white hairs, more or less converging into a pointed tuft; lower 3-lobed, marked with white veins, the central lobe inversely heart-shaped.

Our plant is the original *B. nigra* of Linnæus, and of most authors; though this great botanist, in the 2nd edition of his *Sp. Pl.*, as well as in the *Flora Suecica*, has confounded with it another species, indigenous likewise to Sweden, but distinguished by the elongated, lanceolate, tapering shape of its *calyx-teeth*, and the more unequal serratures of its *leaves*. This latter is given as *B. nigra* in Ehrhart's *Pl. Off.* 456, and is certainly the *Marrubiastrum* of Rivinus, *Monop. Irr. t.* 65. *f.* 1. It appears moreover to be the *Balloten.* 259 of Haller, who, under his white variety, remarks that the *calyx* is not abrupt. I have met with no traces of this species in Britain, the error of Linnæus having caused some inaccuracy in the account given in *Engl. Bot.*

295. MARRUBIUM. White Horehound.

Linn. Gen. 294. *Juss.* 114. *Fl. Br.* 636. *Tourn. t.* 91. *Lam. t.* 508.

Cal. tubular, funnel-shaped, with 10 furrows, permanent and finally hardened; limb spreading, regular, with 10, in some species but 5, narrow teeth. *Cor.* ringent; tube cylindrical; throat elongated, tubular; limb spreading; upper lip erect, linear, in 2 acute lobes; lower broadest, reflexed, in 3 deep lobes, the lateral ones acute, the middle one largest and cloven. *Filam.* much shorter than the corolla, sheltered under the upper lip. *Anth.* small, oblong. *Germ.* rounded, 4-lobed. *Style* thread-shaped, as long as the stamens. *Stigma* cloven, acute. *Seeds* 4, elliptic-oblong, in the bottom of the hardened calyx, which is contracted at the orifice.

Herbaceous, branched; downy, or somewhat woolly; aromatic or bitter. *Leaves* stalked, veiny, bluntly serrated, undivided. *Fl.* numerous, white or purplish, in dense axillary *whorls*.

1. *M. vulgare*. Common White Horehound.

Calyx-teeth ten, bristle-shaped, hooked backwards. Leaves roundish-ovate, unequally serrated.

M. vulgare. *Linn. Sp. Pl.* 816. *Willd. v.* 3. 111. *Fl. Br.* 636. *Engl. Bot. v.* 6. t. 410. *Woodv. t.* 97. *Hook. Scot.* 184. *Fl. Dan. t.* 1036. *Bull. Fr. t.* 165.

M. n. 258. *Hall. Hist. v.* 1. 113.

M. album. *Raii Syn.* 239. *Riv. Monop. Irr. t.* 66. f. 1.

Marrubium. *Matth. Valgr. v.* 2. 182. f. *Camer. Epit.* 573. f. *Fuchs. Hist.* 590. f. *Brunf. Herb. v.* 1. 159. f.

In dry waste ground, by road sides, and on commons.

Perennial. *July*.

Stem bushy, branching from the bottom, bluntly quadrangular, leafy, clothed with fine woolly pubescence. *Leaves* on longish stalks, except the upper ones, which are nearly sessile; their shape and size, as well as the degree of their woolliness, various; their surfaces wrinkled and veiny. *Fl.* white, in dense convex whorls. *Calyx-teeth* rigid, recurved at the point, all spreading; the 5 alternate ones smallest; orifice of the tube hairy.

The whole herb has a white or hoary aspect, and a very bitter, not unpleasantly aromatic, flavour. Its extract is a popular remedy for coughs and asthmatic complaints.

Clusius, Gerarde and Lobel give, for this plant, a figure with a vaulted *corolla*, which has been too incautiously copied and quoted.

296. *LEONURUS*. Motherwort.

Linn. Gen. 295. *Juss.* 114. *Fl. Br.* 637. *Lam. t.* 509. *Tourn. t.* 87.

Cardiaca. *Tourn. t.* 87.

Cal. funnel-shaped, with 5 prominent angles, and 5 sharp spreading teeth, permanent. *Cor.* ringent; not above twice the length of the calyx; tube short, cylindrical, narrow; throat longish, but little dilated; limb spreading; upper lip longest, concave, protuberant, rounded and undivided at the summit, shaggy; lower reflexed, in 3 deep, lanceolate, undivided, smooth, nearly equal lobes. *Filam.* much shorter than the corolla, sheltered under the upper lip. *Anth.* roundish-oblong, attached by the back, incumbent, clothed in an early state with minute, globular, solid, shining granulations, and soon bursting in front into 2 cells. *Germ.* 4-lobed, abrupt. *Style* thread-shaped, incurved. *Stigma* of two acute spreading segments. *Seeds* 4, quadrangular, abrupt, hairy, in the tube of the slightly hardened, strongly veined calyx.

Herbaceous, erect, smooth or somewhat downy, rather

bitter than aromatic, with numerous, stalked, lobed or cut *leaves*, and very copious *whorls* of shaggy purplish *flowers*.

1. *L. Cardiaca*. Common Motherwort.

Upper leaves lanceolate, either three-lobed or undivided.

L. Cardiaca. *Linn. Sp. Pl.* 817. *Willd. v. 3.* 114. *Fl. Br.* 637. *Engl. Bot. v. 4. t.* 286. *Hook. Scot.* 184. *Fl. Dan. t.* 727. *Bull. Fr. t.* 273. *Ehrh. Pl. Off.* 347.

Cardiaca. *Raii Syn.* 239. *Ger. Em.* 705. *f. Dorsten. Bot.* 65. *f. Fuchs. Hist.* 395. *f. Matth. Valgr. v. 2.* 472. *f. Camer. Epit.* 864. *f. Riv. Monop. Irr. t.* 20. *f. 1.*

C. n. 274. *Hall. Hist. v. 1.* 119.

Galeopsis urticis similis. *Brunf. Herb. v. 1.* 155. *f. 158.*

About hedges, on a gravelly or calcareous soil.

In Selsey island, Sussex; and between Tickhill, Yorkshire, and Worksop. *Hudson. Monmouthshire. Lightfoot in his herbarium.* In a lane near Combe wood, Surrey. *Mr. Sowerby.* In several parts of Norfolk and Suffolk, as about Norwich, Bungay, and at Cove near Beccles.

Perennial. *July, August.*

Herb bitter, with a pungent disagreeable smell. *Stems* 2 or 3 feet high, wand-like, minutely downy, acutely quadrangular, with intermediate channels, purplish, beset with very numerous pairs of long-stalked, dark green, somewhat downy *leaves*; the lowermost broadest, and deeply jagged; upper ones acutely three-lobed; those about the summit lanceolate and undivided. *Whorls* numerous, axillary, many-flowered. *Calyx* rigid and pungent. *Cor.* purplish; the upper lip clothed with dense, white, shaggy, upright hairs; lower deeper coloured, variegated, smooth, in 3 nearly equal, entire lobes.

The reputed tonic powers of this herb, or its use in palpitations of the heart, or in that disease of the stomach called heart-burn, are now little regarded. Yet hence originated its old appellation of *Cardiaca*.

297. CLINOPODIUM. Wild Basil.

Linn. Gen. 296. *Juss.* 115. *Fl. Br.* 638. *Tourn. t.* 92. *Lam. t.* 511.

Involucrum of numerous taper leaves, under the flowers, nearly equal to the calyx in length, permanent. *Cal.* tubular, many-ribbed, slightly curved, two-lipped; upper lip broadest, ascending, in 3 deep acute equal segments; lower longest, incurved, in 2 deep slender segments; throat closed with converging hairs. *Cor.* ringent; tube cylindrical, rather short; throat longer and wider; upper lip erect, concave, obtuse, slightly cloven; lower in

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3 deep segments, the middle one very broad, notched. *Filam.* all directed to the upper lip, cylindrical, converging, shorter than the corolla. *Anth.* two-lobed, each pair meeting so as to form a cross. *Germ.* four-lobed, small. *Style* thread-shaped, equal to the stamens. *Stigma* in 2 pointed lobes. *Seeds* 4, ovate, in the bottom of the closed tumid calyx.

Slightly aromatic herbs, with undivided *leaves*, and compound, stalked, hairy, axillary and terminal *whorls* of light-purplish *flowers*.

This genus is distinguished from *Thymus* merely by the concavity of the upper lip of the *corolla*, which is very slight, and by the presence of an *involucrum*, which is not really a part of the fructification. As the species are few, they might perhaps be referred to *Thymus*.

1. *C. vulgare*. Common Wild Basil.

Whorls bristly. Involucral leaves awl-shaped. Flower-stalks branched. Leaves obscurely serrated.

C. vulgare. *Linn. Sp. Pl.* 821. *Willd.* v. 3. 131. *Fl. Br.* 638. *Engl. Bot.* v. 20. t. 1401. *Hook. Scot.* 184. *Fl. Dan.* t. 930. *Matth. Valgr.* v. 2. 169. f.

C. n. 239. *Hall. Hist.* v. 1. 104.

C. origano simile. *Bauh. Pin.* 224. *Raii Syn.* 239.

Clinopodium. *Camer. Epit.* 563. f. *Riv. Monop. Irr.* t. 43. f. 1.

Acynos. *Ger. Em.* 675. f.

Acinos. *Lob. Ic.* 504. f.

In bushy places, about hedges, and by road sides, on a gravelly or chalky soil.

Perennial. *August*.

Herb hairy, weakly aromatic, of a rather light green, with ascending wavy *stems*, a foot high, more or less. *Leaves* ovate, about an inch long, with shallow serratures, and rather short stalks; their ribs fringed beneath with copious bristly hairs. *Whorls* few, axillary and terminal, of numerous, light purple, not unhandsome *flowers*, on forked or branched, hairy stalks, subtended by narrow, awl-shaped, hairy *involucral leaves*, or rather *bracteas*. All the hairs are coarse and spreading, like those on the *calyx*. *Cor.* twice the length of the calyx, with a yellow hairy protuberance at each side of its mouth.

298. ORIGANUM. Marjoram.

Linn. Gen. 297. *Juss.* 115. *Fl. Br.* 638. *Tourn. t.* 94. *Lam. t.* 511.

Involucrum of numerous, imbricated, dilated, flat, coloured, permanent leaves, one under each flower, longer than the

calyx, forming a quadrangular spurious *catkin*. *Calyx* with an even, bluntly angular, tube, more or less perfectly one- or two-lipped, but various in the different species. *Cor.* ringent; tube rather longer than the calyx, a little compressed; throat slightly funnel-shaped, rather longer than the tube, protuberant in front at the base; upper lip erect, nearly flat, obtuse, notched; lower in 3 deep, dependent, mostly equal, simple lobes. *Filam.* thread-shaped, the 2 longest, at least, longer than the corolla. *Anth.* distant, ovate, two-lobed. *Germ.* four-lobed. *Style* thread-shaped, ascending. *Stigma* very slightly notched. *Seeds* 4, ovate, in the bottom of the closed permanent calyx.

Pungent and gratefully aromatic *herbs*, in some instances rather shrubby; with upright, leafy, branched or panicled *stems*; ovate, stalked *leaves*; and copious, purple, or whitish, erect or drooping, often very elegant, *flowers*. No genus can be more evidently natural; but the principal character, founded on the *involucrum*, is not strictly classical. There are several beautiful Greek species.

1. *O. vulgare*. Common Marjoram.

Heads of flowers roundish, panicled, crowded, erect. *Involucral* leaves ovate, smooth. *Calyx* with five acute unequal teeth; throat hairy.

O. vulgare. *Linn. Sp. Pl.* 824. *Willd. v. 3.* 135. *Fl. Br.* 639. *Engl. Bot. v. 16. t.* 1143. *Curt. Lond. fasc. 5. t.* 39. *Woodv. t.* 164. *Hook. Scot.* 184. *Fl. Dan. t.* 1581. *Bull. Fr. t.* 193. *Matth. Valgr. v. 2.* 62. *f. Camer. Epit.* 469. *f. Dalech. Hist.* 887. *f. Ehrh. Pl. Off.* 88.

O. n. 233. *Hall. Hist. v. 1.* 102.

O. vulgare spontaneum. *Raii Syn.* 236.

O. anglicum. *Ger. Em.* 666. *f.*

O. sylvestre, seu vulgare. *Fuchs. Hist.* 552. *f. Ic.* 315. *f.*

Origanum. *Riv. Monop. Irr. t.* 60. *f. 1.*

In bushy places, on a lime-stone or gravelly soil.

Perennial. *July, August.*

Root creeping. *Herb* a foot high, with a warm aromatic flavour, somewhat like that of Wild Thyme. *Stems* purplish, leafy, clothed unequally with short recurved hairs; branched and panicled at the summit. *Leaves* deflexed, bright green, entire or slightly serrated, minutely fringed, besprinkled with resinous dots. *Fl.* light purple, in dense, convex tufts, with *involucral* leaves of a darker purple, rather longer than the *calyx*, which last is tubular, smooth, covered with resinous dots, and closed at the mouth with dense, prominent, very conspicuous, white

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hairs ; the margin in 5 erect, broadish, nearly equal, coloured teeth.

The *calyx* differs remarkably in different species of this genus, consisting in some of an undivided unilateral leaf, without teeth ; while in others it is, more or less equally, five-toothed, or two-lipped. The *involucrum* is uniform and constant in all.

O. Onites of Dillenius in Ray's Synopsis, not that of Linnæus, appears to have been some variety of the *vulgare*, which no person has been able to ascertain since the time of Mr. Dale.

299. THYMUS. Thyme, or Calamint.

Linn. Gen. 297. *Juss.* 115. *Fl. Br.* 639. *Tourn. t.* 93. *Lam. t.* 512. *Acinos.* *Dill. Gen.* 104. *t.* 4.

Cal. tubular, many-ribbed, rather tumid underneath at the base, two-lipped, closed at the throat with converging hairs ; upper lip broadest, flat, erect, with 3 sharp teeth ; lower of 2 longer, equal, narrower, awl-shaped teeth. *Cor.* ringent ; tube as long as the calyx ; throat short, but little dilated ; upper lip shortest, flat, erect, obtuse, with a small notch ; lower longer and broader, spreading, in 3 deep obtuse lobes, the middle one broadest. *Filam.* shorter than the corolla, slender, incurved. *Anth.* distinctly two-lobed. *Germ.* four-cleft. *Style* thread-shaped. *Stigma* in 2 acute segments. *Seeds* 4, small, roundish, in the bottom of the closed calyx.

Aromatic, pungent, branched, somewhat shrubby, but often diffuse and of humble growth ; in some instances annual. *Leaves* small, stalked, ovate, rarely heart-shaped, marked with resinous dots, more or less fringed, hairy, or woolly. *Fl.* axillary ; or crowded into terminal heads, red, purplish, or white.

1. *T. Serpyllum*. Wild Thyme.

Flowers in small heads. Stems recumbent. Leaves flat, ovate, obtuse, entire ; fringed at their base.

T. Serpyllum. *Linn. Sp. Pl.* 825. *Willd. v.* 3. 138. *Fl. Br.* 639. *Engl. Bot. v.* 22. *t.* 1514. *Curt. Lond. fasc.* 2. *t.* 47. *Hook. Scot.* 185.

T. n. 235. *Hall. Hist. v.* 1. 102.

Serpyllum. *Brunf. Herb. v.* 2. 22. *f.*

Serpyllum. *Fuchs. Hist.* 251. *f.*

S. vulgare. *Raii Syn.* 230. *Ger. Em.* 570. *f.* *Bauh. Hist. v.* 3. *p.* 2. 269. *f.* *Vaill. Par.* 183. *t.* 32. *f.* 7, 9.

β. *Huds.* 262.

S. vulgare flore albo. *Tourn. Inst.* 197. *Dill. in Raii Syn.* 230.

γ. *S. vulgare*, flore amplo. *Raii Syn.* 230. *Vaill. Par. t.* 32. *f.* 8.
Large-flowered Mother of Thyme. *Pet. H. Brit. t.* 31. *f.* 2.

δ. *Serpyllum vulgare majus*. *Dill. in Raii Syn.* 231.

S. majus flore purpureo. *Ger. Em.* 570. *f.*

ε. *S. citratum*. *Raii Syn.* 231. *Ger. Em.* 571. *f.*

Lemon Thyme. *Pet. H. Brit. t.* 31. *f.* 4.

ζ. *Serpyllum angustifolium glabrum*. *Dill. in Raii Syn.* 231.

Thymus Serpyllum. *Woodv. t.* 110 ?

η. *Serpyllum vulgare hirsutum*. *Raii Syn.* 231.

S. latifolium hirsutum. *Bauh. Pin.* 220. *Prodr.* 108. *Vaill. Par. t.* 32. *f.* 6.

θ. *S. hirsutum minus repens inodorum*. *Pluk. Almag.* 344. *Dill. in Raii Syn.* 231.

ι. *S. villosum fruticosius*, floribus dilutè rubentibus. *Raii Syn.* 231;
excluding Bauhin's synonyms.

On heaths and dry mountainous ground every where.

δ. In Okey hole, Somersetshire. *Petiver*. ε. In Kent, but rarely.

Ray. In a wood of Mr. Knight's at Downton castle, Shropshire, on the north bank of the river. θ. In Ireland. *Plukenet*.

ι. On the Welsh mountains. *Lhwyd*, and *Sherard*.

Perennial. *July, August*.

Roots creeping. *Stems* recumbent, entangled, somewhat shrubby, downy, with numerous, wavy, ascending, leafy branches, scarcely a finger's length, each terminating in a dense head of short-stalked purple flowers, the middle segment of whose under lip is variegated and entire. The *stamens* vary in length, and the *corolla* in size as in γ; but this is a trifling variety. In β it is white. The *leaves* are entire, strongly fringed at the base and *footstalks*; in η, and apparently the two following varieties, which I have not seen, they are more or less hairy. δ is a larger variety, for which *Petiver* has given a figure, copied from *Ger. Em.* 573. *f.* 2; but I cannot refer this figure to any known appearance of our *Serpyllum*. The odour of the whole plant is warm and gratefully aromatic; in ε it partakes of a fine lemon scent. Bees are fond of the flowers. Whether the quality of mutton is improved by the sheep feeding on this plant, or on fine short grasses which usually accompany it, is still a matter of great doubt.

2. *T. Acinos*. Basil Thyme.

Flowers about six in a whorl, on simple stalks. Stem branched, ascending. Leaves acute, serrated. Calyx protuberant at the base.

T. Acinos. *Linn. Sp. Pl.* 826. *Willd. v.* 3. 142. *Fl. Br.* 641. *Engl. Bot. v.* 6. *t.* 411. *Curt. Lond. fasc.* 1. *t.* 43. *Hook. Scot.* 185. *Bull. Fr. t.* 318.

Clinopodium n. 237. *Hall. Hist. v.* 1. 104.

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C. vulgare. *Lob. Ic.* 506. *f.*

Acinos. *Riv. Monop. Irr. t.* 43. *f.* 2.

A. multis. *Raii Syn.* 238. *Bauh. Hist. v.* 3. *p.* 2. 259. *f.*

Ocimum sylvestre. *Ger. Em.* 675. *f.*

Ocimastrum. *Fuchs. Hist.* 896. *f.*

Small Wild Basil. *Pet. H. Brit. t.* 32. *f.* 10.

In cultivated fields, especially on a sandy, gravelly, or chalky soil. Annual. *July, August.*

Root fibrous, small, bearing several branched, spreading, wavy, leafy *stems*, near a span high; their angles blunt; the opposite sides most downy. *Leaves* rather larger than the preceding, stalked, ovate, acute, slightly revolute, and bluntly serrated; rough at the edges and veins; scarcely dotted, and but slightly aromatic. *Fl.* in several axillary whorls, usually 6 in each, of a blueish purple, prettily variegated about the lip, with white and a darker purple, the central lobe being dilated and slightly notched. *Cal.* much swelled in front after flowering. The *leaves* are occasionally entire.

3. *T. Calamintha*. Common Calamint.

Whorls on forked, many-flowered stalks. Leaves with shallow serratures. Hairs in the mouth of the calyx not prominent.

T. Calamintha. *Scop. Carn. ed.* 2. *v.* 1. 425. *Fl. Br.* 641. *Engl. Bot. v.* 24. *t.* 1676. *Relh.* 238.

Melissa Calamintha. *Linn. Sp. Pl.* 827. *Willd. v.* 3. 147. *Huds.* 263. *Purt. v.* 1. 284. *Bull. Fr. t.* 251. *Ehrh. Pl. Off.* 136.

M. n. 241. *Hall. Hist. v.* 1. 105.

Calamintha. *Matth. Valgr. v.* 2. 76. *f.* *Camer. Epit.* 481. *f.* *Riv. Monop. Irr. t.* 46. *f.* 2.

C. vulgaris. *Raii Syn.* 243.

C. vulgaris officinarum. *Ger. Em.* 687. *f.*

C. montana. *Dod. Pempt.* 98. *f.*

C. montana vulgaris. *Lob. Ic.* 513. *f.*

By way sides, and about the borders of fields, chiefly on a gravelly soil, but seldom in any quantity.

Perennial. *July, August.*

Stem erect, bushy, downy like the whole of the herbage. *Leaves* stalked, ovate, about an inch long, marked with pellucid dots; paler and most hoary underneath. *Flower-stalks* axillary, solitary, opposite, forked and many-flowered, making a spurious kind of *whorl*, with awl-shaped *bractees* at their principal subdivisions. *Cal.* exactly that of a *Thymus*, swelling a little at the base in front; the 2 lower teeth long and fringed, as in *T. Serpyllum*; the tube closed with white, converging hairs, which however do not project so far as to be conspicuous. *Cor.* twice the length of the calyx, light purple dotted with violet, downy; its upper lip somewhat concave, but the margin is erect, with a

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shallow notch ; lower in 3 lobes, the middlemost largest, inversely heart-shaped.

The whole plant has a peculiarly sweet aromatic flavour, and makes a pleasant tea, especially mixed with smaller portions of Pepper-mint, Balm, or some others of the same natural family.

4. *T. Nepeta*. Lesser Calamint.

Whorls on forked many-flowered stalks, longer than the adjoining leaf. Leaves serrated. Hairs in the mouth of the calyx prominent.

T. Nepeta. *Fl. Br.* 642. *Engl. Bot.* v. 20. t. 1414. *Relh.* 239.

Melissa Nepeta. *Linn. Sp. Pl.* 828. *Willd.* v. 3. 147. *Curt. Lond. fasc.* 6. t. 40.

M. n. 240. *Hall. Hist.* v. 1. 105.

Calamintha odore pulegii. *Raii Syn.* 243. *Ger. Em.* 687.f.

C. montana. *Matth. Valgr.* v. 2. 77.f. *Camer. Epit.* 482.f.

C. folio incano. *Riv. Monop. Irr.* t. 47.

On dry banks, and by way sides, on a chalky soil, plentifully.

Perennial. *August*.

Rather smaller in every part than the last, especially the *leaves*, which nevertheless are more strongly serrated. The *flower-stalks* are more compound, much longer than the adjoining leaves. The odour of the herbage is very strong, resembling *Mentha Pulegium*. The very prominent and conspicuous white hairs, in the mouth of the *calyx*, afford an obvious distinction between this and *T. Calamintha*.

300. MELITTIS. Bastard-Balm.

Linn. Gen. 299. *Juss.* 116. *Fl. Br.* 643. *Lam. t.* 513.

Cal. bell-shaped, slightly angular, direct, somewhat two-lipped, variously lobed ; upper lip rather longest, acute ; lower rather shorter, acute, deeply cloven. *Cor.* ringent ; tube much narrower than the calyx ; throat a little dilated ; upper lip erect, rounded, entire, slightly concave ; lower spreading, in 3 deep obtuse lobes, the middle one largest, inversely heart-shaped. *Filam.* awl-shaped, straight, shorter than the upper lip, the 2 intermediate ones shortest. *Anth.* two-lobed, converging in pairs forming a double cross. *Germ.* in 4 obtuse downy lobes. *Style* thread-shaped, reaching to the anthers. *Stigma* cloven, acute. *Seeds* 4, oval, small, in the bottom of the open unaltered calyx.

Herbs which acquire in drying the scent of hay. *Stems* mostly simple, leafy, erect, 18 inches high, square, rough with spreading or deflexed hairs. *Leaves* stalked, ovate, serrated. *Fl.* large, handsomely variegated with purple

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and white, solitary or aggregate, on short, simple, axillary stalks.

1. *M. Melissophyllum*. Reddish Bastard-Balm.

Calyx with three unequal, partly notched, lobes.

M. Melissophyllum. *Linn. Sp. Pl.* 832. *Willd. v. 3.* 157, with confused synonyms. *Huds.* 264. *Fl. Br.* 643. *Engl. Bot. v. 9. t. 577.* *Jacq. Austr. t. 26.*

Melissophyllum. *Riv. Monop. Irr. t. 21. f. 2.*

M. n. 244. *Hall. Hist. v. 1.* 107.

Melissa Fuchsii. *Raii Syn.* 242. *Lob. Ic.* 515. *f. Camer. Hort.* 99. *t. 30.* separate calyx very correct.

M. Fuchsii, flore purpureo. *Ger. Em.* 690. *f.*

Lamium Pannonicum primum, versicolore flore. *Clus. Hist. v. 2.* 37. *f.*

In woods and hedges of the south and west of England.

About Totnes, Devonshire, and Haverford-west, Pembrokeshire.

Ray. In the New Forest, Hampshire. *Huds.* Roots brought from Devonshire, by Mr. Hudson, have long been cultivated in Chelsea garden. *Mr. Fairbairn*. In St. Leonard's forest, Sussex, and near Netley Abbey, Hampshire. *Mr. Lightfoot's herbarium*.

Perennial. *May, June*.

Root fibrous, slightly creeping. *Herbage* deep green, finely hairy, especially the *stem*, which is almost entirely without branches. *Leaves* $1\frac{1}{2}$ or 2 inches long, copiously and equally serrated, veiny; paler beneath. *Fl.* 1, 2 or 3 in the bosom of each leaf, on round, simple *stalks* about equal to the *footstalks*, all turned one way. *Cal.* reticulated with hairy veins, coloured, fringed, the margin gaping, unequally three-lobed; upper lobe longest, acute, often with a single notch at each side; two lower ones equal, lateral, either undivided or notched. *Cor.* twice or thrice the length of the calyx, downy; externally pale red, or flesh-coloured; internally whitish, with a central crimson spot on each lateral lobe of the lower lip, and a double one, with paler stains, on the middle lobe.

The whole plant, when it begins to dry, becomes highly fragrant, like Woodruff, or Vernal Grass.

2. *M. grandiflora*. Purple-and-white Bastard-Balm.

Calyx with four nearly equal lobes.

M. grandiflora. *Fl. Br.* 644. *Engl. Bot. v. 9. t. 636.* *Dicks. H. Sicc. fasc. 18.* 17.

M. Melissophyllum. *Mill. Illustr. t. 52.* *Curt. Lond. fasc. 6. t. 39.*

Melissophyllum. *Fuchs. Hist.* 498. *f. Riv. Monop. Irr. t. 21. f. 1.*

M. Fuchsii et Dodonæi. *Dalech. Hist.* 958. *f.*

Melissa Fuchsii flore albo. *Ger. Em.* 690. *f.*

Lamium Pannonicum primum, albo flore. *Clus. Hist. v. 2. 37. f.*

In woods and hedges, in the south-west extremity of England.

By the road side at Hall, near Barnstaple, Devonshire. *Curtis.*

A mile from Ashburton, in the road towards Plymouth; also at Liskard, Cornwall. *Mr. D. Turner and Mr. Sowerby. 1799.*

Perennial. *May.*

Like the foregoing in general aspect, but the *leaves* are rather broader, and more acutely serrated: The *flowers* are obviously and essentially different. *Cal.* in 4 almost perfectly equal, undivided or notched, lobes, which are all lateral. *Cor.* larger than the former, and very handsome, rather cream-coloured than pure white, the middle lobe only, of the lower lip, almost entirely occupied by an uninterrupted violet spot, a lighter stain of this same colour running along the tube underneath. The scent in drying agrees with the former. The *calyx* varies a little with respect to occasional notches, but is always sufficiently unlike the other more general species. Both however are natives of Switzerland, as well as of England, and were probably confounded by Haller.

301. SCUTELLARIA. Skull-cap.

Linn. Gen. 301. Juss. 117. Fl. Br. 645. Lam. t. 515.

Cassida. Tourn. t. 84.

Cal. tubular, very short; orifice slightly 2-lipped, in 4 shallow, obtuse, entire lobes; closed after flowering by a dorsal incumbent scale. *Cor.* ringent, closed; tube very short; throat much longer, ascending, compressed, dilated upward; upper lip concave, in 3 segments, the middle one cloven, concave, side ones flat, acute, covered by the others; lower lip broader, in 3 shallow lobes. *Filam.* 4, concealed by the upper lip. *Anth.* small, roundish, incumbent, 2-lobed. *Germ.* 4-lobed. *Style* thread-shaped, on a level with the stamens. *Stigma* simple, acute, incurved. *Seeds* 4, roundish, in the bottom of the permanent calyx, covered by the enlarged dorsal scale, which is bent down in front over the already closed mouth of the tube.

Perennial herbs, with axillary, or spiked and bracteate, handsome, blue, purple, red, or yellow *flowers*. *Leaves* simple; either entire, or more or less deeply serrated, scarcely aromatic. *Cal.* when in fruit very peculiar, like a box with a fixed lid.

1. *S. galericulata.* Common Skull-cap.

Leaves lanceolate, crenate, rugged; heart-shaped at the base. Flowers axillary.

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S. galericulata. *Linn. Sp. Pl.* 835. *Willd. v. 3.* 173. *Fl. Br.* 645. *Engl. Bot. v. 8. t. 523.* *Curt. Lond. fasc. 3. t. 36.* *Hook. Scot.* 185. *Fl. Dan. t. 637.* *Bull. Fr. t. 275.* *Ehrh. Pl. Off.* 146.

Scutellaria. *Riv. Monop. Irr. t. 77. f. 1.*

Cassida n. 280. *Hall. Hist. v. 1.* 122.

C. palustris vulgator, flore cæruleo. *Raii Syn.* 244.

Lysimachia galericulata. *Lob. Ic.* 344. *f. Dalech. Hist.* 1060. *f. Ger. Em.* 477. *f.*

Hood-Mint. *Petiv. H. Brit. t. 34. f. 10.*

About the reedy margins of rivers, as well as in ditches, and other watery situations, frequent.

Perennial. *July, August.*

Root creeping. *Herb* deep green, often tinged with a violet hue, more or less downy. *Stem* 12 or 18 inches high, erect, leafy, simple, or branched in the middle. *Leaves* on very short stalks, above an inch long, tapering from a heart-shaped base into a broadish-lanceolate, obtuse figure, with shallow notches or serratures, veiny, scarcely wrinkled. *Fl.* axillary, solitary, an inch long, drooping, nearly sessile, scentless, variegated with shades of blue; the lips streaked with white; the mouth closed. After the fall of the *corolla*, the closed *calyx* and its lid become remarkable, and characterize the genus beyond all uncertainty.

2. *S. minor*. Lesser Skull-cap.

Leaves ovate, nearly entire; heart-shaped, and occasionally lobed, at the base. Flowers axillary.

S. minor. *Linn. Sp. Pl.* 835. *Willd. v. 3.* 173. *Fl. Br.* 645. *Engl. Bot. v. 8. t. 524.* *Curt. Lond. fasc. 4. t. 43.* *Hook. Scot.* 185. *Dicks. H. Sicc. fasc. 5. 6.*

Cassida palustris minima, flore purpurascente. *Tourn. Inst.* 182. *Raii Syn.* 244. *Lind. Alsat.* 216. *t. 9.*

Gratiola latifolia. *Ger. Em.* 581. *f.*

Small Hood-Mint. *Petiv. H. Brit. t. 34. f. 11.*

On moist heaths, in a gravelly soil, less common than the last.

Perennial. *July, August.*

More branched than the preceding, and scarcely one third its size.

Leaves broader, not at all wrinkled; either quite entire, or dilated and notched at the base, so as to approach a hastate form.

Fl. not half so large as in *S. galericulata*, of a delicate pink colour, rarely inclining to blue; the lower lip white, dotted with red.

302. PRUNELLA. Self-heal.

Linn. Gen. 301. *Fl. Br.* 646.

Brunella. *Juss.* 116. *Tourn. t. 84.* *Lam. t. 516.*

Cal. bell-shaped, two-lipped; upper lip flat, dilated, very abrupt, with 3 very short acute teeth; lower much narrower, but about as long, straight, separated half way

down into 2 spinous-pointed segments. *Cor.* ringent; tube short, cylindrical; throat longer and wider; upper lip concave, entire, inflexed; lower reflexed, in 3 rounded, obtuse, crenate lobes, the middle one broadest. *Filam.* awl-shaped, the 2 uppermost shortest, all forked, more or less perfectly, at the summit. *Anth.* on the lower branch of each filament, opening transversely by 2 valves. *Germ.* four-lobed. *Style* thread-shaped, directed, like the stamens, towards the upper lip, and on a level with them. *Stigma* in two sharp recurved points. *Seeds* 4, oval, in the bottom of the closed, dry, reticulated calyx.

Perennial, downy or roughish, European *herbs*, with undivided or pinnatifid *leaves*, and solitary, terminal, whorled, dense, bracteated *spikes* of dark blue, or purplish, inodorous *flowers*. Herbage not aromatic. Species few.

1. *P. vulgaris*. Common Self-heal, or Slough-heal.

All the leaves ovate-oblong, stalked. Teeth of the upper lip of the calyx scarcely discernible.

P. vulgaris. *Linn. Sp. Pl.* 837. *Willd. v.* 3. 176. *Fl. Br.* 646. *Engl. Bot. v.* 14. t. 961. *Curt. Lond. fasc.* 4. t. 42. *Mart. Rust. t.* 137. *Hook. Scot.* 185. *Fl. Dan. t.* 910.

Prunella. *Raii Syn.* 238. *Ger. Em.* 632. f. *Fuchs. Hist.* 621. f.

Brunella. *Riv. Monop. Irr. t.* 29. *Dod. Pempt.* 136. f.

B. n. 277. *Hall. Hist. v.* 1. 120.

Consolida minor. *Matth. Valgr. v.* 2. 312. f. *Camer. Epit.* 703. f.

β. *Brunella minor*. *Hall. Hist. v.* 1. 120. *Riv. Monop. Irr. t.* 29. f. 1; wanting in some copies.

In meadows and pastures common.

Perennial. *July, August.*

Root somewhat creeping. *Stems* a span high, erect or ascending, leafy, square, downy at the opposite sides with upright hairs; branched chiefly in the lower part. *Leaves* stalked, ovate or oblong, acute or bluntish, crenate or wavy, or, in variety β, quite entire; paler beneath, with downy ribs. *Fl.* numerous, deep purplish blue, in dense, solitary, erect, cylindrical, whorled *spikes*; each *whorl* of 6 flowers, subtended by a pair of broad, obtuse, ribbed, partly coloured, *bracteas*, shorter than the *calyx*. The barren branch of the 2 upper *stamens* is sometimes shortened and blunted.

This herb is, in Germany, reckoned salutary for ulcerations of the throat and mouth, called in the language of that country *die Breune*, whence, says Ray, came the name of *Brunella*. Linnæus softened that barbarous appellation into *Prunella*, without rendering it more classical.

DIDYNAMIA ANGIOSPERMIA.

This order of the artificial system of Linnæus consists, except *Digitalis*, of his own natural order of *Personatæ*, 40, and comprehends two of Jussieu's, *Pediculares*, 35, and *Scrophulariæ*, 40. To the former belong, more or less exactly, all the British genera of our first section, characterized by a four-cleft *calyx*; as well as *Pedicularis*, whose *calyx* is five-cleft, and *Orobanche*, which has a two-lipped, or two-leaved, *calyx*. To the *Scrophulariæ* belong all our genera with a five-cleft *calyx*, except *Pedicularis* and *Linnaea*, the latter being properly referred to Jussieu's *Caprifolia*, 58, the first section of which only really constitutes the order so named. The *Pediculares* and true *Scrophulariæ* have been united by Mr. Brown, *Prodr. N. Holl.* v. 1. 433, under the appellation of *Scrophularinæ*. Two new orders have nevertheless been recently founded, out of these, by M. Richard, the *Melampyraceæ* and *Orobancheæ*. I presume to think them superfluous, and shall offer my reasons under the genera whose names they bear.

Mr. Brown thus defines his *Scrophularinæ*.

Calyx divided, permanent.

Corolla of 1 petal, inferior, mostly irregular, segments imbricated in the bud, deciduous.

Stamens generally 4, 2 longer and 2 shorter, rarely equal: sometimes but 2.

Germen with many seeds, in 2 cells; style 1; stigma 2-lobed; rarely undivided.

Capsule, (very rarely a *Berry*,) of 2 cells, with 2 or 4 valves, which are either undivided or cloven; the partition either double, originating from the inflexed margins of the valves; or simple, either parallel to the valves and undivided, or contrary to them and separable into 2 parts.

Receptacles central, attached to the partition, sometimes separating finally from it.

Seeds numerous, albuminous; the *Embryo* internal, straight;

Radicle directed towards the *scar*.

Herbs, sometimes *shrubs*, with for the most part opposite *leaves*. *Inflorescence* various. *Stipulas* none.

Mr. Brown justly reprehends Jussieu for making the distinction of a parallel or transverse partition in the fruit *absolute*, thus splitting one natural order into two. It is

like making a character “give a genus, not a genus a character,” one of the great causes of so many unnatural genera in Zoology as well as Botany. An American writer has remarked also that “the recent custom among Geologists, of cutting up and subdividing, seems to be upon the point of ruining the simplicity of the Wernerian arrangement, as the same custom among Botanists has already nearly ruined the Linnæan system of vegetables.” *Van Rensselaer’s Survey of the Erie Canal*, p. 17. I hope this last remark is not correctly true, and that such injudicious attempts will be resisted by those who possess the talent of scientific combination; which, in Natural History, is full as necessary as that of observation and discrimination, and much less common.

303. BARTSIA. *Bartsia*.

Linn. Gen. 303. *Juss.* 100. *Fl. Br.* 647.

Nat. Ord. *Personatæ*. *Linn.* 40. *Pediculares*. *Juss.* 35. *Scrophularinæ*. *Br. Prodr.* 433.

Cal. tubular, more or less coloured; the border in 4 acute, nearly equal, segments. *Cor.* ringent, rather compressed; tube short; throat funnel-shaped; upper lip longest, concave, undivided; lower reflexed, small, in 3 deep, nearly equal lobes. *Filam.* thread-shaped, about the length of the upper lip, incurved. *Anth.* incumbent, a little hairy, of two cells opening longitudinally in front, and all collected together under the upper lip. *Germ.* simple, ovate, acute. *Style* thread-shaped, curved. *Stigma* obtuse, undivided. *Caps.* ovate, pointed, compressed, of 2 cells and 2 valves; the partition contrary to the valves, finally splitting lengthwise, and each portion bearing a longitudinal *receptacle*. *Seeds* numerous, small, angular, attached by their inner edge to each receptacle. Downy *herbs*, mostly perennial, turning black in drying. *Stems* erect, leafy, square or round; simple or branched. *Leaves* simple, nearly or quite sessile, mostly opposite, serrated. *Fl.* purple, red, or yellow, in leafy, or bracteated, terminal, upright spikes.

1. *B. alpina*. Alpine *Bartsia*.

Leaves opposite, ovate, somewhat heart-shaped, bluntly serrated. Stem square. Root creeping.

B. alpina. *Linn. Sp. Pl.* 839. *Willd. v.* 3. 187. *Fl. Br.* 647. *Engl.*

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- Bot. v. 6. t. 361. Hook. Scot. 186. Lond. t. 87, excellent. Dicks. H. Sicc. fasc. 10. 14. Fl. Dan. t. 43.*
Stæhelinea n. 312. Hall. Hist. v. 1. 136.
*Euphrasia rubra Westmorlandica, foliis brevibus obtusis. Raii Syn. *285.*
Clinopodio alpino. Pon. Bald. 207. f.
Clinopodium alpinum. Pon. in Clus. Hist. v. 2. 343. f. Ger. Em. 676. f.
C. alpinum hirsutum. Pluk. Almag. 110. Phyt. t. 163. f. 5.
Chamædri vulgari falsæ aliquatenus affinis alpina. Bauh. Hist. v. 3. p. 2. 289. f.
Orton Red Eye-bright. Petiv. H. Brit. t. 36. f. 8.

In boggy alpine meadows, or about the borders of mountain rivulets, in the north of England and Highlands of Scotland.

Near Orton, Westmoreland, by a rivulet which accompanies the road to Crosby. *Ray, Hudson.* Near Middleton in Teesdale. *Rev. Mr. Harriman and Mr. Oliver.* On the Yorkshire as well as Durham side of the river. *Dr. Hooker.* Among rocks to the east of Malghyrdy, in the Highlands of Scotland. *Mr. Dickson.* On Ben Lawers. *Mr. G. Don.*

Perennial. *July.*

Root moderately creeping. *Stems* from 4 to 8 inches high, quite simple, quadrangular, most hairy on the opposite sides. *Leaves* sessile, in pairs crossing each other, ovate, or somewhat heart-shaped, veiny, deep green, strongly serrated, not an inch long. *Fl.* inodorous, on short, solitary *stalks*, from the bosoms of several of the uppermost, diminished, purplish, crowded leaves, forming a dense leafy spike. *Cal.* also purplish, viscid. *Cor.* of a vivid purplish blue. *Seeds* deeply furrowed along their outer edge.

The whole plant turns quite black in drying, especially if gathered young; and, as *Dr. Hooker* observes, cannot be seen to advantage except in its native places of growth, where it makes a beautiful appearance. It occupies the loftiest alps of Switzerland and Savoy.

Linnæus having, very early, dedicated this genus to his highly deserving but unfortunate friend *Bartsch*; who died at Surinam, in consequence of the neglect, if not persecution, of his slave-trading countrymen the Dutch; could not adopt the name given by *Haller*, but established another very handsome *Stæhelina* on the recommendation of the latter. See *Linnæan Correspondence*, v. 2. 294, &c.

2. *B. viscosa.* Yellow Viscid *Bartsia*.

Leaves serrated; upper ones alternate. *Flowers* lateral and distant. *Stem* round. *Root* fibrous.

B. viscosa. Linn. Sp. Pl. 839. Willd. v. 3. 186. Fl. Br. 648. Engl.

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Bot. v. 15. *t.* 1045. *Lightf.* 321. *t.* 14. *Hook. Scot.* 186. *Lond. t.* 167. *Dicks. Dr. Pl.* 72.

Euphrasia major lutea latifolia palustris. *Raii Syn.** 285. *Pluk.*

Phyt. t. 27. *f.* 5, very bad; copied by Petiver, *H. Brit. t.* 36. *f.* 6.

Alectorolophos Italica luteo-pallida. *Barrel. Ic. t.* 665, good.

In marshy ground, in the western parts of Britain and Ireland, but rare.

In several parts of Cornwall and Devonshire. *Huds. F. Borone, and Mr. E. Forster.* Plentiful near Ormskirk, Lancashire. *Huds.*

At Allerton, near Liverpool. *Mr. Robert Roscoe.* In Argylshire.

Lightf. and Mr. J. Mackay. Dr. Hooker mentions several stations of this plant, on the south-west side of Scotland. It is said by Dr. Wade, *Pl. Rar. Hib.* 49, to grow in a bog, 6 miles from Cork, on the road to Killarney.

Annual. *July, August.*

Root fibrous. Stem solitary, erect, round, downy, from 3 to 15 inches high, leafy, simple, except occasionally when very luxuriant. Leaves sessile, ovate-lanceolate, strongly serrated, veiny, downy, about an inch long; the lower ones generally opposite; upper, or floral, ones alternate. Fl. on short solitary stalks, from the bosoms of half, or two-thirds, of the leaves, crowded about the summit of the stem. Cal. with a whitish tube and green border, all over hairy and viscid. Cor. twice as long, yellow, with some stains or streaks of red or purple; the segments of its lower lip rounded. Seeds minute, angular, not bordered.

Mr. Hopkirk observed the flowers to have an agreeable, faint, musky smell. *Hooker.*

Linnæus confounded this plant with his *Rhinanthus Trixago*, which is indeed a *Bartsia*, but a distinct species; see *Prodr. Fl. Græc. v.* 1. 427.

3. *B. Odontites.* Red *Bartsia*.

Leaves lanceolate, serrated; the upper ones alternate. Flowers forming unilateral clusters. Stem square, branched. Root fibrous.

B. Odontites. *Huds.* 268. *Fl. Br.* 648. *Engl. Bot. v.* 20. *t.* 1415. *Relh.* 240. *Hook. Scot.* 186.

Euphrasia Odontites. *Linn. Sp. Pl.* 841. *Willd. v.* 3. 194. *Curt. Lond. fasc.* 1. *t.* 44. *Mart. Rust. t.* 42. *Fl. Dan. t.* 625.

E. pratensis rubra. *Bauh. Pin.* 234. *Raii Syn.** 284.

E. altera. *Dod. Pempt.* 55. *f.* *Lob. Ic.* 496. *f.* *Dalech. Hist.* 1167. *f.*

Odontites. *Riv. Monop. Irr. t.* 90. *f.* 2.

O. n. 304. *Hall. Hist. v.* 1. 134.

Cratæogonon Euphrosine. *Ger. Em.* 91. *f.*

Red Eye-bright. *Petiv. H. Brit. t.* 36. *f.* 7.

In meadows and pastures, especially on a cold and wet clay soil.

Annual. *July, August.*

About a foot high, more or less ; copiously branched, each *branch* terminating in a leafy unilateral *cluster*, or rather *spike*, of numerous, rose-coloured, scentless *flowers*, whose *calyx* is tinged with a dull violet hue. Every part, even the *calyx* and *corolla*, is finely downy ; the *stem* rough with deflexed hairs. *Anthers* hairy at the back and lower part, as in the other species, though otherwise smooth ; their lobes are acute, but hardly bristly. *Seeds* angular, striated.

304. RHINANTHUS. Yellow Rattle.

Linn. Gen. 304. *Juss.* 101. *Fl. Br.* 649. *Lam. t.* 517. *Gærtn. t.* 54. *Pedicularis* species. *Tourn. t.* 77, B, F, M.

Nat. Ord. see n. 303.

Cal. compressed, somewhat inflated, rounded, bladdery, veiny, permanent ; the margin in 4 nearly equal, acute, deep teeth, broad at their base. *Cor.* ringent, nearly closed ; tube almost cylindrical, the length of the calyx ; upper lip narrowest, hooded, compressed, slightly cloven ; lower broadest, expanded, divided half way into 3 obtuse segments, the middle one rather the largest. *Filam.* thread-shaped, shorter than the upper lip, and concealed within it. *Anth.* incumbent, 2-lobed, hairy, not prominent. *Germ.* ovate, compressed, with a channel at each side. *Style* thread-shaped, curved, somewhat longer than the stamens. *Stigma* deflexed, obtuse. *Caps.* roundish-ovate, compressed, obtuse with a small point, of 2 cells, and 2 valves separating at the margin ; *partitions* transverse, combined, narrow. *Seeds* several, obovate, compressed, imbricated, curved downwards, more or less bordered.

Annual *herbs*, with square, leafy, upright *stems* ; oblong, sessile, sharply and copiously serrated *leaves* ; and numerous yellow *flowers*, in leafy *spikes*, without scent.

Elephas of Tournefort, *t.* 482, might perhaps form a distinct genus, though there is no propriety in calling it an Elephant ; any more than there would be in giving the name of *Asinus* to a genus with long hairy ears to the corolla.

1. *R. Crista galli*. Common Yellow Rattle.

Stem slightly branched. Leaves lanceolate, serrated. *Calyx* smooth. *Style* concealed by the upper lip. *Seeds* with a dilated membranous border.

R. Crista galli. *Linn. Sp. Pl.* 840, α . *Willd. v.* 3. 188, α . *Fl. Br.* 649. *Engl. Bot. v.* 10. *t.* 657. *Curt. Lond. fasc.* 5. *t.* 43. *Mart. Rust. t.* 138. *Hook. Scot.* 186. *Fl. Dan. t.* 981 ?

DIDYNAMIA—ANGIOSPERMIA. *Rhinanthus*. 121

R. minor. *Ehrh. Herb.* 46. *Beitr. v.* 6. 144.

Alectorolophus n. 313. *Hall. Hist. v.* 1. 137.

Pedicularis seu *Crista galli lutea*. *Raii Syn.* *284.

Crista galli. *Ger. Em.* 1071. f. ? *Riv. Monop. Irr. t.* 92. f. 3.

C. galli foemina. *Bauh. Hist. v.* 3. p. 2. 436. f.

In rather barren meadows and pastures very common.

Annual. *June*.

Root fibrous. *Stem* about a foot high, with few and generally short branches, leafy, square, often spotted with red or purple, smooth. *Leaves* lanceolate, spreading, acute, sharply serrated, rough and minutely wrinkled on both sides, from an inch to an inch and half long; dilated and heart-shaped at the base. *Fl.* crowded into a terminal, leafy, or rather bracteated, *spike*, each pair crossing the next. *Bracteas* heart-shaped, acute, serrated, green. *Cal.* bladderly, strongly ribbed, smooth. *Cor.* yellow; the segments of its upper lip short, blueish. *Nect.* an ovate, purple, concave scale, at the base of one edge of the broad flattish *germen*. *Anth.* red, awnless, of 2 distinct very hairy lobes, quite concealed by the arched upper lip of the *corolla*, as are likewise the *style* and *stigma*, though the latter sometimes becomes prominent as the flower fades. *Caps.* dry and membranous, making a rattling noise when touched. *Seeds* brown, smooth, each bordered with a broadish, thin, flat, membranous wing.

This plant is reckoned unprofitable to the farmer, encumbering rather than enriching his crop of hay, as cattle are not fond of it, and whether they ever eat it by choice is doubtful.

2. *R. major*. Large Bushy Yellow Rattle.

Stem much branched. *Leaves* linear-lanceolate, serrated. *Bracteas* taper-pointed. *Calyx* smooth. *Style* prominent. *Seeds* slightly bordered.

R. major. *Ehrh. Herb.* 56. *Beitr. v.* 6. 144.

R. Crista galli β . *Linn. Sp. Pl.* 840. *Willd. v.* 3. 189. *Fl. Br.* 649.

Alectorolophus n. 313 β . *Hall. Hist. v.* 1. 137.

Pedicularis major angustifolia ramosissima, flore minore luteo, labello purpureo. *Dill. in Raii Syn.* *284.

Crista galli angustifolia montana. *Bauh. Pin.* 163. *Prodr.* 86.

In corn-fields in the north of England.

A mile from Borough-bridge, in the road to Knaresborough, also between Wetherby and Catall, Yorkshire; and near West Newton, Northumberland; always among corn. *Dr. Richardson*. Plentifully on Stockton Common, and in many other parts of the county of Durham, in corn-fields "approaching to peat;" sometimes nearly obliterating crops of corn. *Mr. James Backhouse*.

Annual. *July*, 2 or 3 weeks later than the former.

Dr. Richardson distinguished this species, from our common *R. Crista galli*, by its greater size, copious branches, narrower leaves, and smaller flowers with a purple (upper) lip. Ehrhart has characterized it by the incurved tube of the corolla, which in the former is straight. Mr. Backhouse, to whom I am obliged for numerous wild specimens, says it may be known at first sight by its greater size, being 2 feet high, much branched, and bushy; its much denser spikes; and its yellowish bractes, each of which terminates in an elongated green point. The segments of the upper lip of the corolla are wedge-shaped, and purple. Germen narrower, and more tumid, than in *R. Crista galli*. Style prominent. Nectary heart-shaped, more spreading, and greenish. The seeds are thick at the edge, and not quite destitute of a membranous margin, but this is much narrower than in the former. Prof. Afzelius long ago assured me that *R. major* of Ehrhart differed in its seeds from our common *Crista galli*. The *Alectorolophus* n. 314, of Haller, which is less branched, with broader leaves, and a hairy calyx, appears very distinct from our *R. major*, and more allied to *R. Crista galli*. I have *R. major* gathered by Mr. Davall, on some of the loftiest of the mountains of Switzerland.

305. EUPHRASIA. Eye-bright.

Linn. Gen. 304. Juss. 100. Fl. Br. 650. Tourn. t. 78. Lam. t. 518. Gærtn. t. 54.

Nat. Ord. see n. 303.

Cal. tubular, cylindrical, ribbed, permanent; the margin in 4 deep, equal, pointed teeth. *Cor.* ringent, open; tube the length of the calyx, cylindrical; throat short, somewhat wider; limb variable in size; its upper lip slightly concave, with several notches; lower spreading, in 3 deep, more or less unequal, obtuse, cloven, or inversely heart-shaped, lobes. *Filam.* thread-shaped, directed towards the upper lip. *Anth.* incumbent, large, of 2 roundish lobes pointed at their base, the points of the lower anthers elongated into straight bristly spines, of unequal lengths. *Germ.* ovate. *Style* thread-shaped, as long as the stamens. *Stigma* obtuse, undivided. *Caps.* oblong, obtuse, compressed, of 2 cells and 2 membranous valves. *Seeds* several, minute, elliptic-oblong, compressed, numerous furrowed longitudinally at each side.

Branched herbs of humble growth, smooth or downy, not aromatic. Leaves opposite, sessile, either ovate and serrated, or linear and entire. Fl. in leafy spikes, numerous, either variegated or yellow.

DIDYNAMIA—ANGIOSPERMIA. *Melampyrum*. 123

1. *E. officinalis*. Common Eye-bright.

Leaves ovate, furrowed, sharply toothed.

E. officinalis. Linn. *Sp. Pl.* 841. Willd. *v.* 3. 193. *Fl. Br.* 650. *Engl. Bot.* *v.* 20. *t.* 1416. Curt. *Lond. fasc.* 5. *t.* 42. Woodv. *suppl.* *t.* 220. Hook. *Scot.* 186. Bull. *Fr.* *t.* 233.

E. n. 303. Hall. *Hist.* *v.* 1. 133.

Euphrasia. Raii *Syn.* *284. Riv. *Monop. Irr.* *t.* 90. *f.* 1. Fuchs. *Hist.* 246. *f.* Ic. 137. *f.* Trag. *Hist.* 328. *f.* Ger. *Em.* 663. *f.* Lob. *Ic.* 496. *f.*

Euphrasia. Matth. *Valgr.* *v.* 2. 369. *f.* Camer. *Epit.* 767. *f.*

On heaths, and in mountainous pastures, abundantly.

Annual. July—September.

An elegant little plant, varying in height from one inch to 4 or 5, with a square, downy, leafy stem, either simple or branched. Leaves $\frac{1}{4}$ or $\frac{1}{2}$ an inch long, almost entirely opposite, ovate or heart-shaped, downy, strongly ribbed and furrowed, with sharp tooth-like serratures. *Fl.* axillary, solitary, very abundant, inodorous, but remarkable for their brilliant variegated aspect, on which account, it seems, the plant became celebrated as good for weak eyes. The corolla varies much in size as well as colour, being commonly white with deep purple streaks, and a yellowish palate; the anthers violet. On the mountains of Scotland there is a more slender variety, with smaller but more richly tinted blossoms; on the Alps a dwarf, large-flowered, more purple variety is common. The seeds are few, somewhat angular, thin at the edges, strongly striated, or furrowed, at the sides.

306. MELAMPYRUM. Cow-wheat.

Linn. *Gen.* 305. Juss. 101. *Fl. Br.* 651. Tourn. *t.* 78. Lam. *t.* 518. Gærtn. *t.* 53.

Nat. Ord. see the 3 preceding genera.

Cal. tubular, permanent; the border in 4 deep, straight, unequal, rather long and narrow segments. *Cor.* ringent, moderately gaping; tube oblong, curved; throat a little dilated, compressed; upper lip vaulted, compressed, notched, with a narrow, reflexed border at each side; lower flattish, slightly plaited, with 2 protuberances on the palate, direct, as long as the upper, divided half way into 3 nearly equal, obtuse segments. *Filam.* from the throat, awl-shaped, shortish, incurved, meeting under the upper lip. *Anth.* converging, oblong, each of 2 oblong pointed lobes. *Germ.* ovate, pointed. *Style* thread-shaped, inclosed in the corolla. *Stigma* deflexed, obtuse. *Caps.* oblong, obliquely pointed, rather

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compressed, but tumid; its upper edge convex; lower straight; of 2 cells and 2 valves, bursting at the upper margin; the partitions transverse, narrow. *Seeds* 2 in each cell, smooth, ovate-oblong, tumid, obtuse, attached, by a short, thick, spongy stalk, to the base of the partitions.

Branched, spreading, annual, nearly smooth *herbs*, 12 or 18 inches high, with bluntly quadrangular *stems*; opposite, entire *leaves*; and handsome bracteated *spikes* of yellow and purple *flowers*; the *bracteas* pointed, elegantly toothed, and variously coloured. The *seeds* are, without doubt, naturally 2 in each cell, and resemble grains of wheat. All the species turn black in drying.

This genus and its nearest allies are admirably distinguished by their *seeds*, and to make a natural order of *Melampyraceæ* on account of any peculiarity in the *fruit* or *seed*, which is only indicative of a generic distinction, appears to me not judicious.

1. *M. cristatum*. Crested Cow-wheat.

Spikes quadrangular. Bracteas heart-shaped, closely imbricated, finely toothed.

M. cristatum. Linn. *Sp. Pl.* 842. Willd. *v.* 3. 197. *Fl. Br.* 651. *Engl. Bot.* *v.* 1. *t.* 41. *Riv. Monop. Irr.* *t.* 81. *f.* 2.

M. n. 311. *Hall. Hist.* *v.* 1. 136.

M. cristatum, flore albo et purpureo. *Raii Syn.* *286. *Bauh. Hist.* *v.* 3. *p.* 2. 440. *f.* *Moris.* *v.* 3. 429. *sect.* 11. *t.* 23. *f.* 2.

M. angustifolium cristatum, spicâ quadratâ, floribus ex luteo pallescentibus, nostras. *Pluk. Almag.* 245. *Phyt.* *t.* 99. *f.* 2.

Crested Cow-wheat. *Petiv. H. Brit.* *t.* 36. *f.* 10.

In woods and thickets; sometimes in corn-fields.

Plentiful in Cambridgeshire and Bedfordshire. *Huds.* In Maple-bush lane, Gressenhall, Norfolk. *Mr. Crowe.* Abundantly in Ripton wood, Huntingdonshire. *Mr. Woodward.*

Annual. *July.*

Stem leafy, with wide spreading *branches*, roughish to the touch.

Leaves long and narrow, almost linear, rough-edged, $1\frac{1}{2}$ or 2 inches in length. Spikes solitary, terminal, with close, pectinated, purplish *bracteas*, each tipped with a green leafy point. *Fl.* rather small, not quite closed, variegated with cream-colour and light purple; the palate yellow. *Cal.* with lanceolate teeth, none of them longer than the tube, all minutely fringed, as are likewise the teeth of the *bracteas*. *Anth.* of a dark dull purple. *Caps.* crescent-shaped, thin, compressed, with 2 large *seeds* in each cell.

2. *M. arvense*. Purple Cow-wheat.

Spikes conical. Bracteas lax, lanceolate, pinnatifid. Calyx-teeth longer than the tube. Corolla closed.

M. arvense. Linn. *Sp. Pl.* 842. Willd. *v.* 3. 198. *Fl. Br.* 652. *Engl. Bot.* *v.* 1. *t.* 53. Hook. *Lond. t.* 63. Dicks. *Dr. Pl.* 74. *Fl. Dan.* *t.* 911. Riv. *Monop. Irr. t.* 80.

M. n. 310. Hall. *Hist. v.* 1. 136.

M. purpurascens comâ. Bauh. *Pin.* 234. Dill. in Raii *Syn.* *286. Moris. *v.* 3. 428. *sect.* 11. *t.* 23. *f.* 1.

M. multis, sive *Triticum vaccinum*. Bauh. *Hist. v.* 3. *p.* 2. 439. *f.*

M. cæruleum. Ger. *Em.* 90. *f.*

Triticum vaccinum. Trag. *Hist.* 663. *f.* Dalech. *Hist.* 419. *f.*

Braun Fleyschblüm. Brunf. *Herb. v.* 2. 54. *f.*

Parietaria sylvestris tertia. Clus. *Hist. v.* 2. 45. *f.*

In corn-fields on a light soil.

Near Lycham, Norfolk. Sherard. In the common field at Sporle in the same county, especially among wheat. Rev. Mr. Edwards, and Rev. J. S. Watts. At Swardeston and Keswick. Mr. Crowe; also at Costesy and Bixley; all near Norwich.

Annual. July.

Stem $1\frac{1}{2}$ or 2 feet high, purplish, acutely quadrangular; the branches more upright than in the foregoing. Leaves lanceolate, rough-edged, a little downy on both sides; one or two of the upper pairs sometimes pinnatifid at the base. Spikes long, many-flowered. Bracteas loosely spreading, deeply pectinated or pinnatifid; the upper ones entirely, and the lower partially, coloured of a delicate purplish rose-colour. Fl. large, about as long as the bracteas, without scent. Segments of the calyx peculiarly long and linear, coloured like the bracteas. Cor. closed, yellow; the lips variegated with rose colour and purple. Seeds 2 in each cell, though often by abortion solitary; hence the accurate John Bauhin describes 2 or 3 in each capsule. They resemble grains of wheat in shape and colour.

This is one of our most beautiful wild plants. It will grow from fresh seed in a dry garden, and is well worthy of cultivation. The late Mr. Watts observed that whenever the field at Sporle was cropped with wheat, but not otherwise, this *Melampyrum* might be found in abundance. At Costesy it is more constant, not only in the fields, but, as Dr. Hooker remarks, "on the dry banks which border them." *M. barbatum* of Willdenow seems well distinguished by its gaping yellow flowers, independent of the green bracteas.

3. *M. pratense*. Common Yellow Cow-wheat.

Flowers axillary, in partly distant pairs, turned to one side. Corolla closed; lip direct. Upper floral leaves toothed at the base.

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M. pratense. *Linn. Sp. Pl.* 843. *Willd. v.* 3. 199. *Fl. Br.* 652. *Engl. Bot. v.* 2. *t.* 113. *With.* 545. *Lightf.* 324. *Hook. Scot.* 187.

M. sylvaticum. *Huds.* 270. *Wade Dubl.* 168. *Riv. Monop. Irr. t.* 81. *f.* 1.

M. n. 308. *Hall. Hist. v.* 1. 135.

M. sylvaticum flore luteo, sive *Satureia lutea sylvestris*. *Raii Syn.* *286. *Bauh. Hist. v.* 3. *p.* 2. 441.

M. luteum latifolium. *Bauh. Pin.* 234; not 243, as in *Willdenow*, copied from *Linnæus*.

Parietaria sylvestris secunda. *Clus. Hist. v.* 2. 44. *f.*

Cratægonon. *Lob. Ic.* 36. *f.*

C. album. *Ger. Em.* 91.

Common Cow-wheat. *Petiv. H. Brit. t.* 36. *f.* 9.

β. *Melampyrum latifolium*, flore albo, labio inferiore duabus maculis luteis distincto. *Tourn. Par.* 492. *Dill. in Raii Syn.* *286.

M. pratense. *Huds.* 270.

Frequent in woods and bushy places, especially on a clay or loamy soil.

β. In the wood by Dr. Richardson's house at North Bierley, Yorkshire. *Dillenius*.

Annual *July, August*.

Stem smooth, with several wide spreading branches, so as to be frequently almost decumbent. *Leaves* bright green, lanceolate, taper-pointed, smooth, or roughish at the edges only, entire, except those that accompany the flowers, which are more or less toothed at the base, and sometimes deeply pinnatifid, with very narrow segments, partaking much of the *bractæas* of the last species, and like them occasionally coloured; but they are not so much crowded into a spike. *Fl.* axillary, solitary, opposite, turned in pairs to one side. *Cal.* bell-shaped, with teeth of its own length. *Cor.* pale at the base; deep yellow towards the summit, with a purple spot at each side of the mouth, which is closed, not gaping, the lower lip prominent and straight, not deflexed; palate elevated, orange-coloured. *Caps.* with a curved point. *Seeds* 2 in each cell.

Cows are reported to be fond of this plant, and *Linnæus* says the best and yellowest butter is made where it abounds. β is given but as a variety by *Dillenius* himself, and *Vaillant* was of the same opinion. It seems to differ only in having paler flowers.

4. *M. sylvaticum*. Wood Cow-wheat.

Flowers axillary, in distant pairs, turned to one side. Corolla gaping; lip deflexed. Leaves nearly all entire.

M. sylvaticum. *Linn. Sp. Pl.* 843. *Willd. v.* 3. 199. *Fl. Br.* 653. *Engl. Bot. v.* 12. *t.* 804. *Lightf.* 325. *Hook. Scot.* 187. *Fl. Dan. t.* 145.

M. n. 307. *Hall. Hist. v.* 1. 135.

DIDYNAMIA—ANGIOSPERMIA. *Lathræa*. 127

In alpine woods, especially in forests of fir.

By the road side going from Taymouth to the hermitage, July, 1775.

Mr. Lightfoot in his herbarium. At Wick Cliffs; *Mr. Swayne.*

With. Near Middleton in Teesdale, Durham. *Rev. Mr. Harri-*
man and Mr. E. Robson. Not uncommon in Scotland. *Hooker.*

Annual, *July, August.*

This agrees with the last in general habit, but is rather smaller, especially the *flowers*. The *stem* is roughish. *Leaves* broader, less apt to turn black in drying, all of them generally quite entire, as well as equidistant, each pair from the bottom of the branch upwards being accompanied by a pair of *flowers*, less decidedly turned to one side, and by no means crowded into spikes. Segments of the *calyx* lanceolate, longer than the tube. *Cor.* half the size of the preceding, deep yellow, with some orange or red spots about the mouth, which is open, not closed; the lower lip pointing downwards; upper elevated. *Capsule* less pointed; the valves reticulated with prominent veins. *Seeds* sometimes solitary in each cell, but mostly in pairs.

307. LATHRÆA. Tooth-wort.

Linn. Gen. 305. *Juss.* 102. *Fl. Br.* 654. *Lam. t.* 551. *Gærtn. t.* 52.

Clandestina. *Tourn. t.* 424.

Nat. Ord. see *n.* 303—306. *Orobanchæ* of Richard. *Hook.*
Scot. 222.

Cal. bell-shaped; border in 4 deep, upright, nearly equal, permanent segments. *Cor.* ringent; tube as long as the calyx, or longer; limb tumid; upper lip vaulted, acute, cloven or entire; lower smaller, spreading, obtuse. *Nect.* a notched, depressed, fleshy gland, proceeding from the *receptacle*, at the lower side of the germen. *Filam.* awl-shaped, shorter than the corolla, concealed by its upper lip. *Anth.* converging, obtuse, their lobes pointed beneath. *Germ.* roundish, compressed. *Style* cylindrical, scarcely the length of the corolla. *Stigma* abrupt, notched, deflexed. *Caps.* roundish, obtuse, with a point, of one cell and two membranous elastic valves, invested with the enlarged inflated calyx. *Seeds* numerous, roundish, rough, attached to a spongy, longitudinal, double *receptacle*, in the centre of each valve.

Perennial, succulent, parasitical, pallid *herbs*, partly subterraneous, growing either immersed in crumbling vegetable mould, or among decayed leaves, at the roots of trees. *Leaves* thick, loosely imbricated, whitish, entire. *Fl.* axillary, either corymbose, or forming a leafy cluster, always above ground, purplish, or white, erect or drooping.

1. *L. Squamaria*. Greater Tooth-wort.

Flowering branches erect, simple. Flowers axillary, unilateral, pendulous; lower lip in three lobes; upper cloven.

L. Squamaria. *Linn. Sp. Pl.* 844. *Willd. v. 3.* 201. *Fl. Br.* 654. *Engl. Bot. v. 1. t. 50.* *Dicks. H. Sicc. fasc. 10. 13.* *Hook. Scot.* 187. *Fl. Dan. t. 136.*

Squamaria. *Riv. Monop. Irr. t. 89. f. 2.*

S. n. 297. *Hall. Hist. v. 1.* 130.

Anblatum. *Cord. Hist. 89. 2. f.*

A. Cordi, sive Aphyllon. *Raii Syn.*288.* *Bauh. Hist. v. 2.* 783. *f.*

Dentaria. *Matth. Valgr. v. 2.* 313. *f.*

D. major. *Camer. Epit. 705. f.*

D. major Matthioli. *Ger. Em. 1585. f.* *Blackstone 23.*

Orobanche radice dentatâ, major et minor. *Rudb. Elys. v. 2.* 230. *f. 7, 8.*

O. radice squammatâ, foliis rotundis, flore pendente et suaverubente Funbœnsis. *Ibid. 234. f. 17.*

O. radice dentatâ, altius radicatâ, foliis et floribus albo-purpureis. *Mentz. Pugill. t. 3.* *Moris. v. 3.* 503. *sect. 12. t. 16. f. 14;* *see also f. 11.*

In dry shady places, mostly at the roots of hazels or elms.

In several parts of Kent. *Ray, Dickson.* In a shady lane near Harefield, Middlesex, plentifully. *Blackstone.* Westmoreland. *Huds.* At Exton, near Stamford. *Earl of Gainsborough.* In Newburgh woods, Yorkshire. *Rev. Archdeacon Peirson.* Under high rocks behind Saxton's bath house, Matlock. *Rev. W. F. Drake.* In St. Catharine's wood, Dublin. *Wade Pl. Rar. Hib.* 48. Perennial. *April.*

Lower part of the *stem* immersed in loose earth, or dead leaves, branched, spreading, densely leafy, round, smooth, whitish; flowering branches terminal, solitary, erect, 4 or 5 inches high, round, a little hairy, purplish, unbranched, leafy, many-flowered. *Leaves* ovate, thick, juicy, entire, smooth, cream-coloured; closely imbricated on the lower part of the stem; more loosely on the flowering branches. *Fl.* axillary, solitary, stalked, drooping, rather longer than the leaves. *Cal.* of the hue and texture of the leaves; hairy at the base; segments smooth, incurved, the 2 uppermost largest. *Cor.* of a pale dull purple, with a white tube, about as long as the limb; upper lip deeply cloven. *Anth.* large, hairy. *Caps.* large, thin, crowned by the withered *style*, and invested with the permanent *calyx*.

The analogy of the preceding genus helps us to understand the herbage of this singular plant, and proves what is usually taken for *roots* to be a partly subterraneous *stem*. The real *root* is, I believe, fibrous and parasitical. The *floral leaves* agree with the rest, as in *Melampyrum sylvaticum*. *L. Clandestina* has also axillary *flowers*, from a subterraneous herbage.

308. PEDICULARIS. Louse-wort, or Red Rattle.

Linn. Gen. 307. *Juss.* 101. *Fl. Br.* 655. *Tourn. t.* 77. *f.* A, D, E, H—L. *Lam. t.* 517. *Gærtn. t.* 53.

Nat. Ord. see. *n.* 303—306.

Cal. with a roundish-ovate, tumid, but somewhat compressed, tube; the border in 5, sometimes only 2, unequal, leafy, more or less defined, jagged segments. *Cor.* ringent; tube oblong, unequal; upper lip narrowest, erect, vaulted, compressed, notched; lower dilated, flat, in 3 deep obtuse lobes, the central one narrowest. *Nect.* a gland under the germen. *Filam.* thread-shaped, concealed by the upper lip. *Anth.* incumbent, 2-lobed, acute at the lower part, compressed. *Germ.* ovate. *Style* thread-shaped, longer than the stamens. *Stigma* simple, deflexed. *Caps.* oblong, or ovate, pointed, oblique, of 2 cells and 2 valves, bursting at the summit, the partitions from the centre of each valve. *Seeds* few, angular, pointed, attached to a roundish *receptacle*, at the base between the partitions.

A numerous and handsome, chiefly alpine, genus, of which we have only two species in Britain. The whole are in general perennial, herbaceous, erect, or ascending, with variously pinnatifid or pinnate, rather bluntly toothed, leaves, and red, purple, or partly yellow, elegant flowers. They are mostly of an acrid quality, not acceptable to domestic cattle, and turn black in drying. Sheep are said to become scabby after feeding for a short time on *P. sylvatica*, whence the name seems to have originated. Goats eat the various species, as they do, generally, the most acrid plants.

1. *P. palustris*. Marsh Louse-wort. Tall Red Rattle.

Stem solitary, branched. Calyx ovate, hairy, ribbed, in two unequally notched lobes.

P. palustris. *Linn. Sp. Pl.* 845. *Willd. v.* 3. 202. *Fl. Br.* 655. *Engl. Bot. v.* 6. *t.* 399. *Hook. Scot.* 187. *Bull. Fr. t.* 129.

P. n. 320. *Hall. Hist. v.* 1. 139.

P. palustris rubra elatior. *Raii Syn.* *284.

Pedicularis. *Riv. Monop. Irr. t.* 92. *f.* 1.

Tall Red Rattle. *Petiv. H. Brit. t.* 36. *f.* 3.

In marshes and boggy meadows. . .

Perennial? June, July.

130 DIDYNAMIA—ANGIOSPERMIA. *Antirrhinum*.

Root small, by some said to be annual. *Stem* solitary, erect, 12 or 15 inches high, leafy, angular, a little downy, with many lateral, spreading, opposite branches. *Leaves* partly opposite, partly scattered, stalked, smooth, bright green, doubly pinnatifid; the segments obtuse, bluntly notched, various in breadth. *Fl.* axillary, opposite, solitary, nearly sessile, of an elegant crimson, darker in the upper lip, without scent; lower lip minutely fringed. *Cal.* with 2 principal lobes, variously notched.

2. *P. sylvatica*. Pasture Louse-wort. Dwarf Red Rattle.

Stems several, spreading, simple. Calyx oblong, angular, smooth, in five unequal notched segments.

P. sylvatica. Linn. *Sp. Pl.* 845. Willd. *v.* 3. 203. *Fl. Br.* 656. *Engl. Bot.* *v.* 6. *t.* 400. Hook. *Scot.* 188. *Fl. Dan.* *t.* 225.

P. n. 321. Hall. *Hist.* *v.* 1. 139.

P. pratensis rubra vulgaris. Raii *Syn.* *284.

P. pratensis purpurea. Bauh. *Pin.* 163.

P. minor. Riv. *Monop. Irr.* *t.* 92. *f.* 2.

Pedicularis. Ger. *Em.* 1071. *f.* Lob. *Ic.* 748. *f.*

Fistularia. Dod. *Pempt.* 556. *f.*

Common Red Rattle. Petiv. *H. Brit.* *t.* 36. *f.* 4.

In moist, heathy, rather mountainous, pastures, frequent.

Perennial. June, July.

Of a more humble stature than the preceding, with several, spreading or recumbent, unbranched stems, from a large, fleshy, tapering, subdivided root, which Mr. Purton marks *annual*, as Ray does that of both our species. The present has no appearance of being so. *Leaves* alternate, doubly pinnatifid and notched; radical ones ovate, undivided, crenate, recurved. *Fl.* of a more uniform rose-colour than the last; the lobes of their lower lip not fringed. *Cal.* more oblong and tubular, with 4 larger angles, and as many intermediate smaller ones; the margin unequally cut into 5 notched segments. Unquestionably a most distinct species, though Willdenow expresses some doubts on the subject.

The Marquis of Stafford found one regular salver-shaped flower, with 6 segments, and as many stamens, 4 of them long, and 2 short, on a wild specimen, near his castle of Dunrobin in Sutherland, North Britain, in 1808. See *Tr. of Linn. Soc.* *v.* 10. 227. Dr. Hooker and Mr. Borrer met with a similar flower, in the same neighbourhood, the following season.

309. ANTIRRHINUM. Toadflax, or Snapdragon.

Linn. *Gen.* 309. Juss. 120. *Fl. Br.* 656. Tourn. *t.* 75. Lam. *t.* 531. Gærtn. *t.* 53. Hall. *Hist.* *v.* 1. 144.

DIDYNAMIA—ANGIOSPERMIA. *Antirrhinum*, 131

Linaria. *Tourn. t.* 76. *Juss.* 120. *Desfont Allant. v.* 2. 37. *Br. in Ait. H. Kew. ed.* 2. v. 4. 10.

Nat. Ord. *Personatæ*. *Linn.* 40. *Scrophulariæ*. *Juss.* 40.

Cal. in 5 deep, oblong, permanent segments; the two lower ones rather the most distant from each other. *Cor.* ringent; tube oblong; either tumid, or elongated into a spur of various lengths, at the base, which is the *nectary*; upper lip cloven, reflexed at the sides; lower obtuse, three-lobed, with an elevated palate, closing the mouth, and hollow underneath. *Filam.* concealed under the upper lip; sometimes accompanied by a fifth abortive stamen. *Anth.* converging. *Germ.* roundish, or ovate. *Style* thread-shaped, equal to the stamens. *Stigma* obtuse. *Caps.* roundish, or oval, obtuse, of 2 cells, bursting variously and irregularly at the summit. *Seeds* numerous, roundish, or angular, or winged, attached to an oblong cylindrical *receptacle*, in the middle of the partition.

A numerous genus of annual or perennial *herbs*; with round *stems*; simple, mostly entire, narrow and smooth, *leaves*; axillary or clustered, particoloured, chiefly blue or yellow, *flowers*, rarely whitish or reddish, the *nectary* of which is in some a shallow pouch, in others a spur, differing greatly in length in different species. The *capsule* of those whose *nectary* is a pouch only, opens with 3 pores instead of 2, on which Mr. Brown founds a generic distinction for the original *Antirrhinum* of Tournefort. But the opening of the capsule in the *Linaria* of these authors is so variously valvular, or so irregularly jagged, as to show that part to be indeterminate, or unfit to give a character, in this genus; the length of the spurs, being, moreover, but comparative. I therefore concur with those who do not separate *Linaria*, there being no distinction of habit to depend upon, and the name, formed out of *Linum*, being inadmissible.

* *Leaves dilated. Stems flaccid.*

*1. *A. Cymbalaria*. Ivy-leaved Snapdragon.

Leaves heart-shaped, five-lobed, alternate, smooth. Stems procumbent.

A. Cymbalaria. *Linn. Sp. Pl.* 851. *Willd. v.* 3. 232. *Fl. Br.* 656 *Engl. Bot. v.* 7. *t.* 502. *Curt. Lond. fasc.* 1. *t.* 45. *Hook. Scot.* 188. *Bull. Fr. t.* 305. *Fl. Dan. t.* 1220.

A. n. 339. *Hall. Hist. v.* 1. 146.

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Linaria hederaceo folio glabro, seu Cymbalaria vulgaris. *Tourn. Inst.* 169. *Dill. in Raii Syn.* *282.

L. Cymbalaria. *Ait. H. Kew. ed. 2. v. 4.* 10.

Cymbalaria. *Matth. Valgr. v. 2.* 468. *f. Camer. Epit.* 860. *f. Riv. Monop. Irr. t. 86. f. 2.* *Bauh. Pin.* 306.

C. italica. *Ger. Em.* 529. *f. Lob. Ic.* 615. *f.*

Umbilicus Veneris Officinarum. *Lonic. Kreuterb.* 95. *f. 1.*

On old walls, having been introduced from Italy.

On walls bordering the Thames, having escaped, as Dillenius thought, from Chelsea garden. It is become no less common about Oxford and Cambridge, and within a few years at Norwich.

Perennial. *May—November.*

Root fibrous. *Stems* trailing or pendulous, very much branched, round, smooth, leafy, hanging from old walls in rich, dense, flowery festoons. *Leaves* alternate, stalked, ivy-like, of a deep shining green, often tinged with violet, and, like every other part of the plant, quite smooth. *Fl.* solitary, on long axillary stalks, not large, but very elegant, variegated with violet and blue; their palate yellow; spur short, though pointed. *Caps.* roundish, much and irregularly torn at the top, to let out the black wrinkled seeds.

2. *A. spurium*. Round-leaved Fluellin, or Snapdragon.

Leaves ovate, downy, chiefly alternate. *Stems* procumbent, hairy.

A. spurium. *Linn. Sp. Pl.* 851. *Willd. v. 3.* 235. *Fl. Br.* 657. *Engl. Bot. v. 10. t. 691.* *Curt. Lond. fasc. 3. t. 37.* *Fl. Dan. t. 913.*

A. Elatine. *Bull. Fr. t. 245.*

A. n. 341. *Hall. Hist. v. 1.* 147.

Linaria Elatine dicta, folio subrotundo. *Raii Syn.* *282.

L. spuria. *Ait. H. Kew. ed. 2. v. 4.* 11.

Elatine. *Riv. Monop. Irr. t. 86. f. 1.* *Dill. Gen.* 116. *t. 6.*

Veronica foemina. *Fuchs. Hist.* 167. *f. Ger. Em.* 625. *f. Matth. Valgr. v. 2. 55. f. Camer. Epit.* 462. *f.*

In corn-fields, but rare.

About London rare. *Curtis.* Frequent in Suffolk. *Mr. Woodward.* Hampshire. *Sir Joseph Banks, Bart.* At Seething, Norfolk. *Mrs. Kett.* At Binham. *Mr. Crowe.* In Shepey island. *Mr. Sowerby.* In Warwickshire and Worcestershire. *Mr. Purton.*

Annual. *July—September.*

The whole herb is downy, or finely hairy. *Root* fibrous, small. *Stems* spreading and procumbent, branched, leafy. *Leaves* on short stalks, ovate, either blunt or acute, entire, except an occasional notch or two, mostly alternate, a few of the lowermost only being opposite. *Fl.* on slender, simple, axillary stalks. *Cal.* with ovate segments, enlarged after flowering, downy. *Cor.*

with a recurved spur, the length of its tube, and of the same pale greenish hue; upper lip short, violet; lower yellow, with an orange palate. Abortive *stamen* minute, shapeless, in the arch of the upper lip. Dillenius, after Rivinus, very rightly observes that the *capsule* opens by an oblique deciduous segment over each cell, by which they characterize their genus *Elatine*; but which is only one of those slight differences, that confirm a too much neglected maxim of Linnæus, "there are few genera in which some part or other of the fructification is not subject to aberration."

I have specimens, found by the late Sir John Cullum, having some regular *flowers* with 5 spurs, and others partly so, with only 2. Sometimes, Hudson says, there are 3 or 4. See *A. Linaria* hereafter.

3. *A. Elatine*. Sharp-pointed Fluellin, or Snapdragon.

Leaves chiefly halberd-shaped, alternate; lowermost ovate, opposite. Stems procumbent, hairy.

A. Elatine. Linn. *Sp. Pl.* 851. Willd. v. 3. 234. Fl. Br. 658. Engl. Bot. v. 10. t. 692. Curt. Lond. fasc. 1. t. 46. Fl. Dan. t. 426. Ehrh. Herb. 128.

A. n. 340. Hall. Hist. v. 1. 146.

Linaria Elatine dicta, folio acuminato. Raii Syn. *282.

L. Elatine. Ait. H. Kew. ed. 2. v. 4. 11.

Elatine. Matth. Valgr. v. 2. 360. f. Camer. Epit. 754. f.

E. altera. Ger. Em. 625. f.

E. fœmina, folio anguloso. Bauh. Hist. v. 3. p. 2. 372. f.

In corn-fields after harvest, on a gravelly or chalky soil.

Annual. July—September.

Like the last in general habit and characters, except being more slender; with halberd-shaped, usually smaller, leaves. The flowers also are smaller and less conspicuous, with similar but paler colours. They have moreover an abortive *stamen*, and are occasionally regularly five-cleft. The *capsule* is like the last. Seeds much wrinkled.

** *Leaves narrower. Stems upright.*

4. *A. repens*. Creeping Pale-blue Toadflax.

Leaves linear, glaucous, scattered; partly whorled. Stem paniced. Calyx smooth, the length of the spur.

A. repens. Linn. *Sp. Pl.* 854. Willd. v. 3. 240. Fl. Br. 658. Engl. Bot. v. 18. t. 1253. Hook. Scot. 188. Dicks. Dr. Pl. 75. H. Sicc. fasc. 17. 18.

A. monspessulanum. Linn. *Sp. Pl.* 854. Willd. v. 3. 240. With. 550.

Linaria odorata Monspessulana. Raii Syn. *282. Bauh. Hist. v. 3. p. 2. 459. f.

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L. cærulea, foliis brevioribus et angustioribus. *Raii Syn.* *282.

L. angustifolia, flore cinereo striato. *Dill. Elth.* 198. *t.* 163. *f.* 197.

L. minor repens et inodora. *Vaill. Par.* 118.

L. repens. *Ait. H. Kew. ed. 2. v. 4.* 13.

Blueish Sweet Toadflax. *Pet. H. Brit. t.* 35. *f.* 6.

On chalky banks, or on rocks near the sea, but rare.

Near Penryn, Cornwall. *Ray. F. Borone*. Abundantly by the roadside between Llandovery and Trecastle, South Wales. *Rev. T. Butt.* In an old slate quarry, near Bandon, County of Cork. *Mr. J. T. Mackay.* On the chalk hill going down to Henley-upon-Thames, where it was observed in the time of Dillenius, plentifully.

Perennial. *July—September.*

Root whitish, creeping extensively. *Herb* smooth and glaucous. *Stems* numerous, erect, round, branched and paniced, leafy. *Leaves* linear, or somewhat lanceolate, entire, an inch long, or more, erect, often 4 or 5 in a whorl, but as frequently opposite, or scattered; the upper ones mostly alternate. *Fl.* numerous, in paniced upright *clusters*, with a small leafy *bractea* under each partial stalk. They are certainly sweet-scented, as Vaillant asserts, though he uses the definition of Tournefort, which says otherwise. *Cal.* with smooth lanceolate segments. *Spur* conical, very pale grey, as well as the *lower lip*; *palate* yellow; *upper lip* and *tube* striped with blue. *Caps.* globose, opening by several lanceolate equal valves. *Seeds* angular, rugged, black.

A. monspessulanum and *A. repens* of Linnæus being the very same plant, the latter name is retained as by far the most eligible; nor can I perceive how any doubt could arise respecting John Bauhin's synonym, nor how Ray came to describe so distinct a species twice over. Linnæus was led into the same error by him and Dillenius; and the latter, by saying he had gathered *A. arvense*, a very different plant, "wild," though he does not say in Britain, caused Mr. Hudson to introduce that also into his *Flora*.

According to Dr. Hooker, Mr. Hopkirk has observed some regular *flowers* in *A. repens*. The whole genus is more or less subject to this metamorphosis; see the next species. A fasciculated *stem* is also frequent in the upright perennial kinds.

5. *A. Linaria*. Common Yellow Toadflax.

Leaves linear-lanceolate, crowded. *Stem* erect. *Spikes* terminal. *Flowers* imbricated. *Calyx* smooth, shorter than the spur.

A. Linaria. *Linn. Sp. Pl.* 858. *Willd. v. 3.* 253. *Fl. Br.* 660. *Engl. Bot. v. 10. t.* 658. *Curt. Lond. fasc. 1. t.* 47. *Mart. Rust. t.* 93. *Woodv. suppl. t.* 221. *Hook. Scot. 188. Fl. Dan. t.* 982. *Bull. Fr. t.* 261.

A. n. 336. *Hall. Hist. v. 1. 145.*

Linaria. Riv. Monop. Irr. t. 82. f. 1.

*L. lutea vulgaris. Raii Syn. *281. Ger. Em. 550. f.*

L. vulgaris. Ait. H. Kew. ed. 2. v. 3. 17.

Osyris. Fuchs. Hist. 545. f. Ic. 310. Matth. Valgr. v. 2. 550.

Camer. Epit. 930. f.

β. Peloria. Linn. Am. Acad. v. 1. 55. t. 3. Engl. Bot. v. 4. t. 260.

Curt. Lond. fasc. 6. t. 41.

In hedges and the borders of fields, on a gravelly soil, frequent.

β. occurs occasionally, increasing for a time by roots, but is not perpetuated by seed.

Perennial. *June, July.*

Root creeping, somewhat woody. *Herb* smooth, bright green, scarcely at all glaucous. *Stems* 2 feet high, densely clothed, with irregularly set, narrow, acute *leaves*, and terminating in a close upright *spike* of rich yellow, inodorous, bracteated *flowers*; the *palate* downy and orange-coloured; the *spur* of each as long as the *tube*, pointing perpendicularly downwards, and 5 times the length of the *calyx*. Each cell of the ovate *capsule* opens with 4 or 5 lanceolate valves.

The curious variety *β*, with a five-cleft, regular, five-spurred *corolla*, and five equal *stamens*, made a great noise in Sweden, when first discovered, and narrowly escaped being exalted, by Linnæus, into a new genus. It has however been found on the same plant with *flowers* that are naturally formed, see *Engl. Bot. t. 658.*, and proves in a garden a very changeable and transient variety. The same alteration has been observed in several other species.

6. *A. minus.* Least Snapdragon.

Leaves lanceolate, obtuse, downy, mostly alternate. *Stem* much branched, spreading. *Calyx* longer than the spur.

A. minus. Linn. Sp. Pl. 852. Willd. v. 3. 251. Fl. Br. 660. Engl. Bot. v. 28. t. 2014. Curt. Lond. fasc. 5. t. 41. Hook. Scot. 188. Fl. Dan. t. 502.

A. n. 335. *Hall. Hist. v. 1. 145.*

A. minimum repens. Ger. Em. 549. f.

A. tertium. Matth. Valgr. v. 2. 539. f. Camer. Epit. 922. f.

A. alterum minimum. Lob. Ic. 406. f.

*Linaria Antirrhinum dictum. Raii Syn. *283.*

L. arvensis minima. Riv. Monop. Irr. t. 85. f. 2.

L. minor. Ait. H. Kew. ed. 2. v. 4. 16.

In sandy fields.

Annual. *June—August.*

Root fibrous. *Herb* erect, much branched, all over downy and viscid, from 4 to 10 or 12 inches high. *Leaves* linear-lanceolate, obtuse, tapering at the base into a footstalk, alternate, except occasionally a few of the lowermost, *Fl.* on long, solitary, axillary

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stalks, small and inconspicuous; the *tube*, *upper lip*, and very short *spur* purplish; *lower lip* white, with a yellow *palate*. *Caps.* ovate, oblique, each cell opening by 3 or 4 short blunt teeth. *Seeds* ovate, strongly furrowed, with compressed, prominent, intermediate ribs.

The wooden cuts of this species, in the old authors, greatly excel the engraving of Rivinus, which is not accurate in the flowers.

*** *Corolla without a prominent spur.*

* 7. *A. majus*. Great Snapdragon.

Corolla with a rounded prominence at the base. Flowers in a dense cluster. Leaves lanceolate. Segments of the calyx ovate, obtuse.

A. majus. Linn. *Sp. Pl.* 859. Willd. *v.* 3. 256. *Fl. Br.* 661. *Engl. Bot.* *v.* 2. *t.* 129. Hook. *Scot.* 189. Bull. *Fr.* *t.* 277.

A. n. 333. Hall. *Hist.* *v.* 1. 144.

Antirrhinum. Riv. *Monop. Irr.* *t.* 82. *f.* 1. Dod. *Pempt.* 182. *f.* Lob. *Ic.* 404. *f.*

A. purpureum sive album. Ger. *Em.* 549. *f.*

A. primum et secundum. Matth. *Valgr.* *v.* 2. 537, 538. *f., f.* Camer. *Epit.* 920, 921. *f., f.*

On old walls, and chalk cliffs, but supposed not to be indigenous. Perennial. *July, August.*

Stem branched, leafy, more or less downy and viscid, of a shrubby habit, but generally destroyed by the winter's cold, as is often the *root* itself. *Leaves* opposite or alternate on the same plant, somewhat stalked, lanceolate, acute, recurved, entire, smooth; dark green on the upper side; paler beneath. *Fl.* large and showy, rose-coloured or white, with a large, yellow, downy *palate* white in front. They form dense *clusters*, beset with ovate *bracteas*. *Cal.* downy and viscid, in 5 ovate, concave, unequal segments. *Cor.* near $1\frac{1}{2}$ inch long, with a short round pouch at the base on the lower side. *Caps.* ovate, of 2 oblique cells; the lowermost, or larger, protuberant at the base, opening at the top by 2 large pores, each bordered with 3 broad, short, spreading valves; the upper cell with a single orifice, crowned with a three-cleft valve. *Seeds* black, much wrinkled. The whole *capsule* has been compared to the skull of a calf; but the old name, Calf's-snout, rather applies to the mouth of the *corolla*. A fine deep crimson variety is common in gardens, and another with a white tube and crimson lips, but these run into each other on the same root.

A rude figure of this *Antirrhinum*, but which cannot be mistaken, exists in the famous Vienna manuscript of Dioscorides, under the name of *Κυνοκεφάλιον*, or Dog's-head, and is engraved in *Diosc. Ic.* *t.* 103.

8. *A. Orontium*. Lesser Snapdragon.

Corolla scarcely tumid at the base. Flowers loosely spiked.

Calyx finger-shaped, longer than the corolla.

A. Orontium. Linn. *Sp. Pl.* 860. Willd. *v.* 3. 258. *Fl. Br.* 662.

Engl. Bot. v. 17. *t.* 1155. *Curt. Lond. fasc.* 4. *t.* 45.

A. n. 334. *Hall. Hist. v.* 1. 144.

A. angustifolium sylvestre. *Raii Syn.* *283. *Bauh. Hist. v.* 3. *p.* 2. 464. *f.*

A. minus. *Ger. Em.* 549. *f.*

A. minimum. *Lob. Ic.* 405. *f.*

A. arvense. *Riv. Monop. Irr. t.* 82. *f.* 2.

A. quartum. *Matth. Valgr. v.* 2. 540. *f.* *Camer. Epit.* 923. *f.*

In dry sandy, gravelly, or chalky, fields.

Annual. *July, August.*

Whole herb slightly hairy, more or less branched, about a foot high, with a wavy leafy stem. Leaves lanceolate, somewhat stalked, alternate, except a few of the lowermost. *Fl.* axillary, nearly sessile, composing loose leafy spikes. *Cal.* in 5 deep linear segments, just equal in length to the opening corolla, but soon extended much beyond it. *Cor.* of a purplish rose-colour, with a yellow palate; the tube occasionally varying to white. *Caps.* ovate, with 3 pores, each opening by a lid. When nearly ripe it resembles the face of a Monkey, or Bat. Seeds bordered and furrowed.

310. SCROPHULARIA. Figwort.

Linn. Gen. 312. *Juss.* 119. *Fl. Br.* 662. *Tourn. t.* 74. *Lam. t.* 533. *Gærtn. t.* 53.

Nat. Ord. see *n.* 309.

Cal. with 5 rounded, rather unequal, marginal segments, much shorter than the corolla. *Cor.* tubular, unequal, reversed; tube ovate, or globular, large, inflated; limb very small, in 5 deep segments; the upper one, (turned downward,) short, slightly notched, reflexed, 2 lateral ones spreading, 2 lower ones, (turned upward,) largest, half combined, erect, often accompanied by a small interior lobe. *Filam.* declined towards the reversed upper lip, linear, shorter than the corolla. *Anth.* terminal, abrupt, of 2 valves. *Germ.* ovate. *Style* the length of the stamens. *Stigma* simple. *Caps.* ovate or globular, pointed, of 2 cells and 2 valves, the partitions double, from the inflexed margins of the valves. Seeds numerous, small, angular, attached to a globose central receptacle.

Fetid herbs, smooth or downy, sometimes shrubby, some-

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times only biennial, or annual. *Stem* tall, erect, more or less acutely quadrangular, leafy, panniced. *Leaves* opposite, serrated, simple, or variously pinnatifid, or pinnate. *Fl.* numerous, usually with dark-coloured lips; sometimes altogether yellow.

1. *S. nodosa*. Knotty-rooted Figwort.

Leaves heart-shaped, acute; three-ribbed at the base. Stem sharp-edged. Root tuberous.

S. nodosa. *Linn. Sp. Pl.* 863. *Willd. v. 3.* 270. *Fl. Br.* 663. *Engl. Bot. v. 22. t.* 1544. *Hook. Scot.* 189. *Gunn. Norveg. v. 2.* 87. n. 732. t. 4. f. 1—3; not correct.

S. n. 326. *Hall. Hist. v. 1.* 141.

S. major. *Raii Syn.* *283. *Ger. Em.* 716. f. *Brunf. Herb. v. 1.* 215. f. 213.

Scrophularia. *Matth. Valgr. v. 2.* 474. f. *Camer. Epit.* 866. f. *Riv. Monop. Irr. t.* 107. f. 1.

S. minor. *Riv. Monop. Irr. append. f.*

Galeopsis. *Fuchs. Hist.* 193. f. 194.

Brown Figwort. *Petiv. H. Brit. t.* 35. f. 9.

β. *Scrophularia major*, caulibus foliis et floribus viridibus. *Bobart in Raii Syn.* *283.

In hedges, woods, and thickets.

Perennial. *July*.

Herbage nearly or quite smooth, fetid like Elder, when bruised.

Root whitish, tuberous, beset with fleshy knobs. These knobs disappear when the plant comes to perfection. See Fagon's letter to Boccone. *Bocc. Récherches et Obs.* 12mo. 100. *Stem* 2 or 3 feet high, nearly simple, leafy, acutely quadrangular, smooth. *Leaves* stalked, ovate-oblong, acute, sharply and unequally serrated; heart-shaped at the base, where they are cut away, as it were, to the 2 small lateral ribs. *Flower-stalks* axillary and terminal, forked, angular, glandular, forming a paniced, leafy cluster. *Bracteas* lanceolate. *Fl.* a little drooping. *Cal.* smooth. *Cor.* of a dull green, with a livid purple lip. *Caps.* ovate-oblong. β, found by Bobart at Cumner, near Oxford, should seem to be a paler-flowered variety, in consequence perhaps of a more shady situation.

S. nodosa, having been taken for the *Galeopsis* of Dioscorides, which is really *S. peregrina*, and though celebrated for its use in scrofulous disorders, has no tuberous root, it may not be correct to suppose this sort of root first recommended our plant to medical use, or was the origin of the generic name. If however such were the case, it would not be without example in the history of medicine.

2. *S. aquatica*. Water Figwort. Water Betony.

Leaves heart-shaped, bluntish, on decurrent footstalks.
Stem winged. Root fibrous.

S. aquatica. Linn. *Sp. Pl.* 864. Willd. *v.* 3. 270. *Fl. Br.* 663. *Engl. Bot.* *v.* 12. *t.* 854. Curt. *Lond. fasc.* 5. *t.* 44. Hook. *Scot.* 189. *Fl. Dan.* *t.* 507. Ehrh. *Pl. Off.* 156.

S. n. 325. Hall. *Hist.* *v.* 1. 141.

S. aquatica major. Raii *Syn.* *283.

S. caule alato. Riv. *Monop. Irr. append. f.*

S. fœmina. Camer. *Epit.* 867. *f.*

Betonica aquatica. Ger. *Em.* 715. *f.*

In watery places, the margins of pools and rivers, and wet meadows. Very rare in Scotland.

Perennial. July.

Root entirely fibrous. Herb quite smooth, fetid, of a deep shining green. Stem taller than the last, straight, leafy, nearly simple, winged in some degree at the 4 angles. Leaves copiously and finely serrated, veiny, ovate-oblong; heart-shaped at the base, and running down the edges of the footstalks; their lateral ribs not reaching to the margin of the leaf. Cluster of many forked branches, bearing numerous flowers, whose tube is green, the limb of a dark blood-red, more conspicuous than in *S. nodosa*. Capsule globular.

3. *S. Scorodonia*. Balm-leaved Figwort.

Leaves heart-shaped, doubly serrated; downy beneath.
Cluster leafy.

S. Scorodonia. Linn. *Sp. Pl.* 864. Willd. *v.* 3. 271. *Fl. Br.* 664. *Engl. Bot.* *v.* 31. *t.* 2209. Dicks. *H. Sicc. fasc.* 15. 9.

S. Scordii folio. Grisl. *Lusit.* 75.

S. Scorodoniæ foliis. Moris. *v.* 2. 482. *sect.* 5. *t.* 35. Pluk. *Almag.* 338. *Phyt.* *t.* 59. *f.* 5. Raii *Syn.* *283.

Sage Figwort. Petiv. *H. Brit.* *t.* 35. *f.* 11.

On the banks of rivulets in the south, very rare.

Between the port and St. Hilary, Jersey. Sherard. About St. Ives, Cornwall, plentifully, near the sea shore. Mr. E. Lhwyd; and Huds.

Perennial. July, August.

Stems about a yard high, leafy, branched, bluntly quadrangular, clothed with minute, soft, spreading hairs. Leaves downy in like manner underneath, stalked, heart-shaped and 3-ribbed at the base, veiny, doubly serrated; the serratures and points of those which accompany the flowers most acute. Fl. on axillary, forked, downy stalks, composing a long leafy cluster. Tube of the corolla pale; lower lip (turned uppermost) dull purple, the interior lobe greenish. Caps. ovate, smooth. Calyx downy.

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Grisley speaks of this plant as “an efficacious remedy for ulcers;” probably such as are scrofulous.

4. *S. vernalis*. Yellow Figwort.

Leaves heart-shaped, doubly serrated, downy. Flower-stalks axillary, solitary, forked, leafy. Corolla without an interior lobe.

S. vernalis. *Linn. Sp. Pl.* 864. *Willd.* v. 3. 274. *Fl. Br.* 664. *Engl. Bot.* v. 8. t. 567. *Hook. Scot.* 189. *Lond. t.* 70. *Fl. Dan. t.* 411.

S. n. 327. *Hall. Hist.* v. 1. 141.

S. flore luteo. *Bauh. Prodr.* 112. f. *Ger. Em.* 717. f. *Riv. Monop. Irr. t.* 107. f. 2.

S. montana maxima latifolia, flore luteo. *Barrel. Ic. t.* 273.

Lamium Pannonicum aliud. *Clus. Pann.* 594. f. 595. *Hist.* v. 2. 38. f.

In thickets, and under hedges, but rare.

Near Bury St. Edmund's. *Sir T. G. Cullum, Bart.* In Surrey. *Huds.* About Newburgh, Yorkshire. *Rev. Archdeacon Peirson.*

In a lane about two miles south of Stifkey, Norfolk, on the right hand side. *Dr. Hooker.* It is also said to grow in Berkshire, Essex, and several parts of Wales; yet neither Dillenius nor Ray takes notice of this species.

Biennial. *April, May.*

Root tuberous, scaly. *Herb* downy, of a light pleasant green. *Stem* hollow, about 2 feet high, with 4 or 5 slightly winged angles. *Leaves* in the latter case 3 together; otherwise opposite; the uppermost alternate; all stalked, broadly heart-shaped, acute, sharply and doubly serrated, veiny. *Fl.* light yellow, on axillary, repeatedly forked, stalks, accompanied at each fork by small serrated leaves, or *bracteas*. *Cal.* hairy. *Cor.* ovate, tumid; contracted at the mouth, with a very small 5-lobed limb, wanting the interior lobe. The *stamens* all spring from the base of the corolla, as *Dr. Hooker* observes. *Caps.* ovate, acute, with numerous minute seeds.

This plant is less allied to other *Scrophulariæ*, in general resemblance, than to the Peruvian genus *Calceolaria*, to several species of which, see *Sm. Pl. Ic. t.* 2, 3, 4, it bears, in various points, a great affinity.

311. DIGITALIS. Foxglove.

Linn. Gen. 313. *Juss.* 120. *Fl. Br.* 665. *Tourn. t.* 73. *Lam. t.* 525. *Gærtn. t.* 53.

Nat. Ord. *Luridæ*. *Linn.* 28. *Schrophulariæ*. *Juss.* 40.

Cal. in 5 deep, acute or rounded, segments, permanent, much shorter than the corolla; the upper one narrower than the rest. *Cor.* bell-shaped; tube large, cylindrical and contracted at the base, dilated and tumid upwards;

limb small, in 4 unequal segments, the upper one recurved, slightly cloven, lower one largest. *Filam.* awl-shaped, from the tube of the corolla towards the base, bent, declining. *Anth.* deeply cloven, acute. *Germ.* ovate, pointed. *Style* thread-shaped, as long as the stamens. *Stigma* cloven, acute. *Caps.* ovate, pointed, the length of the calyx, of 2 cells, and 2 cloven valves, whose inflexed margins form a double partition at each side. *Seeds* very numerous, small, oblong, angular, attached to a central oblong partition, in each cell.

Some foreign species have an elongated lower lip.

A very handsome genus, of large, herbaceous, rarely shrubby, plants, biennial or perennial, with simple, undivided, downy or smooth, serrated or entire, alternate *leaves*. *Fl.* numerous, very ornamental, purplish, yellow, or tawny, in long, simple, bracteated clusters or spikes. Qualities powerfully emetic and sedative; under proper management useful.

1. *D. purpurea*. Purple Foxglove.

Segments of the calyx ovate, acute. Corolla obtuse; its upper lobe scarcely cloven. Leaves downy.

D. purpurea. Linn. *Sp. Pl.* 866. Willd. *v.* 3. 283. *Fl. Br.* 665. *Engl. Bot.* *v.* 19. *t.* 1297. *Curt. Lond. fasc.* 1. *t.* 48. *Woodv. t.* 24. *Raii Syn.* *283. *Ger. Em.* 790. *f.* *Fuchs. Hist.* 893. *f.* *Fl. Dan. t.* 74. *Bull. Fr. t.* 21. *Dreves Bilderb. t.* 46. *Dalech. Hist.* 831. *f, f.* *Dod. Pempt.* 169. *f.*

D. n. 330. *Hall. Hist. v.* 1. 143.

Digitalis. *Riv. Monop. Irr. t.* 104.

Campanula sylvestris, seu *Digitalis*. *Trag. Hist.* 889. *f.*

In pastures, and about hedges or banks, on a gravelly or sandy soil; but not in Norfolk or Suffolk, though so abundant in most counties.

Biennial. *June, July.*

Root of numerous long and slender fibres. *Stem* upright, wand-like, leafy, mostly simple, roundish, with several slight angles, downy, 3 or 4 feet high. *Leaves* alternate, ovate- or elliptic-oblong, crenate, downy, rugged and veiny, of a dull green; tapering at the base into winged *footstalks*; radical ones largest. *Cluster* terminal, erect, simple, of numerous, sometimes 60, large pendulous, scentless, crimson *flowers*; elegantly marked with eye-like spots, as well as hairy, within.

A variety with pure white *flowers*, dotted in like manner, but with shades of cream-colour or pearl, is kept in gardens, and remains tolerably constant from seed, the only means of propagation in this instance.

142 DIDYNAMIA—ANGIOSPERMIA. Linnæa.

The English name appears to have been derived from *Digitalis Fuchsii*; for that writer is the acknowledged author of the Latin one, alluding to the fingers of a glove, which the flowers resemble. Yet Foxe-glove, as I am told, occurs in Lye's Saxon Dictionary, as the appellation of our plant; which indeed is so conspicuous and handsome, that we can hardly suppose our ancestors left it nameless. The Rev. Hugh Davies records several Welch names for the Foxglove, and mentions having seen it perfectly white by the road side at Penmynydd, and elsewhere. *Welsh Botany* 61.

The virtues of this herb, as a remedy for dropsy, are recorded by Dr. Withering and others, and it is now still more celebrated for lowering the pulse in pulmonary inflammation.

312. LINNÆA. Linnæa.

Linn. Gen. 319. *Juss.* 211. *Fl. Br.* 666. *Lam. t.* 536. *Wahlenb Lapp. t.* 9.

Nat. Ord. Aggregatæ. Linn. 48. *Caprifolia.* Juss. 58.

Cal. double, both permanent: that of the *fruit* inferior, of 4 leaves; 2 interior opposite, minute, acute, smooth; 2 exterior opposite, contrary to the interior and much larger, elliptical, concave, glandular, finally enlarged, and closed over the interior leaves and fruit: that of the *flower* superior, of 1 leaf, in 5 deep, erect, lanceolate, acute, equal segments. *Cor.* of 1 petal, bell-shaped; tube cylindrical, gradually dilated upwards, about twice the length of the superior calyx; limb in 5 deep, nearly equal, slightly spreading segments. *Filam.* awl-shaped, from the base of the corolla, shorter than its limb; the 2 uppermost shortest. *Anth.* incumbent, versatile, oblong, compressed. *Germ.* globular, below the calyx of the flower, of 3 cells. *Style* cylindrical, slightly swelling upward, declining, the length of the corolla. *Stigma* obtuse. *Berry* dry, ovate-oblong, of 1 cell, membranous, closely invested with the inferior calyx, and crowned with the superior one. *Seed* solitary, filling the cavity, ovate-oblong, with a thin simple skin; embryo inverted, in the centre of the fleshy albumen, with a pair of oblong cotyledons turned downward.

A trailing, somewhat shrubby plant, the only known species of an elegant aspect, and rendered most interesting to a botanist on account of the name, given with the concurrence of Linnæus, by his friend Dr. J. F. Gronovius, whose letters to Dr. Richardson, with many particulars concerning him and his works, may be found in the *Lin-*

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næan Correspondence, v. 2. Dr. Wahlenberg has improved the description of the *fruit*, and I have profited by his labours. They sanction the Linnæan opinion of a two-fold *calyx*, the inferior one serving as a protecting covering to the *fruit*.

1. *L. borealis*. Two-flowered Linnæa.

L. borealis. *Linn. Sp. Pl.* 880. *Fl. Suec.* 219. *t.* 1. *Fl. Lapp. ed.* 2. 214. *t.* 12. *f.* 4. *Willd. v.* 3. 340. *Fl. Br.* 666. *Engl. Bot. v.* 7. *t.* 433. *Tr. of Linn. Soc. v.* 3. 333. *With.* 556. *Hook. Scot.* 190. *Wahlenb. Lapp.* 170. *t.* 9. *f.* 3. *Fl. Dan. t.* 3. *Ehrh. Phyt.* 5. *L. n.* 299. *Hall. Hist. v.* 1. 131.

Campanula serpyllifolia. *Bauh. Prodr.* 35. *f.* *Rudb. Act. Suec. for* 1720. 96. *t.* 1.

Nummularia Norwegica repens, folio dentato, floribus geminis. *Petiv. Cent.* 8. 76. *n.* 787.

In dry stony shady fir woods among the mountains of Scotland. First found in an old fir wood at Inglismaldie on the borders of Mearnsshire, in 1795. *Prof. James Beattie, jun.* Dr. Hooker mentions several similar stations in the Highlands or their borders.

Perennial. *May, June.*

Root fibrous. *Stems* trailing and creeping, forming broad leafy patches, branched, woody, nearly round; the young shoots hairy and leafy. *Leaves* opposite, on footstalks about half their own length, roundish, or ovate, mostly bluntish, veiny, firm; crenate in the forepart; slightly hairy, and of a full green, above; paler beneath. *Stipulas* none. Flowering *branches* axillary, erect, about a finger's length, simple, except at the summit, where they are cloven, bearing two elegant, pendulous, flesh-coloured *flowers*, said to be very fragrant at night, with the scent of Meadow-sweet. A pair of very small *leaves* stand at the origin of the partial *flower-stalks*, and there is often a larger pair or two at the lower part of each common stalk, or branch. *Corolla* variegated internally with rose-colour and yellow.

Linnæus describes 2, or rarely all 3, of the cells of the *fruit*, as perfecting their *seed*. Wahlenberg asserts that one only comes to maturity.

Such is the "little northern plant, long overlooked, depressed, abject, flowering early," which Linnæus selected to transmit his own name to posterity. Few could have been better chosen; and the progress of practical botany in Britain seems to be marked by the more frequent discovery of the *Linnæa*.

313. SIBTHORPIA. Sibthorpia.

Linn. Gen. 320. *Juss.* 99. *Lam. t.* 535. *Gartn. t.* 55.

Nat. Ord. Personatæ. *Linn.* 40. *Scrophulariæ*. *Juss.* 40. See *Grammar* 101.

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Cal. turbinate, in 5 deep, ovate, spreading, nearly equal segments. *Cor.* irregularly wheel-shaped, equal to the calyx; tube very short; limb in 5 deep, ovate, spreading segments, alternate with the calyx, the 2 lowermost smallest. *Filam.* from between the 4 superior segments of the corolla, shorter than the limb, almost equal, awl-shaped, spreading laterally, and converging in pairs. *Anth.* of 2 round lobes. *Germ.* rounded, compressed. *Style* cylindrical, as long as the filaments, but thicker. *Stigma* obtuse, peltate. *Caps.* inversely heart-shaped, compressed, of 2 cells and 2 valves, each with a narrow transverse partition. *Seeds* few, ovate, attached to a globular central *receptacle*.

Herbaceous, prostrate, beset with minute, scattered, jointed hairs. *Leaves* alternate, rounded. *Fl.* axillary, solitary, minute. Next akin to *Veronica*, v. 1. 16. Only 1 species.

1. *S. europæa*. Creeping Sibthorpia. Cornish Moneywort.

S. europæa. *Linn. Sp. Pl.* 880. *Willd. v. 3.* 340. *Fl. Br.* 667. *Engl. Bot. v. 10. t.* 649. *Dicks. Dr. Pl.* 76. *Læfl. It.* 150.

S. prostrata. *Salisb. Ic.* 11. t. 6.

Alsine spuria pusilla repens, foliis Saxifragæ aureæ. *Raii Syn.* 252. *Pluk. Almag.* 23. *Phyt. t.* 7. f. 6.

Cornwall Pennywort. *Petiv. H. Brit. t.* 6. f. 11.

In moist shady places, about springs and rivulets, in the south. Plentiful in Cornwall and Devonshire. *Ray*, and *Prof. J. Sibthorp, M.D.* Near the bottom of Conner hill, on the road from Tralee to Dingle, Ireland. *Mr. J. T. Mackay*.

Perennial. *July, August.*

Roots fibrous, certainly perennial, propagating themselves widely, for many years, among short wet grass, in the garden of the late Mr. Vere at Kensington Gore. *Stems* prostrate, creeping extensively, branched, entangled, leafy, slender and delicate, minutely hairy like the rest of the herbage. *Leaves* stalked, horizontal, orbicular-kidney-shaped, bluntly crenate, rather succulent, veiny, light green; paler beneath. *Fl.* on short, axillary, simple stalks, whitish; their 3 upper segments more or less tinged with pale red.

This genus, named by Linnæus in honour of Dr. Humphrey Sibthorp, the successor of Dillenius in the botanical chair at Oxford, was most richly deserved by his son, the late Professor, author of the *Flora Oxoniensis*, and the collector of abundant materials for the *Flora Græca*, which he never lived to describe. Of the latter splendid work 5 volumes in folio, each containing 100 coloured plates, have already appeared, and the rest are in progress.

314. LIMOSELLA. Mudwort.

Linn. Gen. 320. *Juss.* 96. *Fl. Br.* 668. *Br. Prodr.* v. 1. 443. *Lam.* t. 535. *Gærtn.* t. 50.

Plantaginella. *Dill. Nov. Gen.* 113. t. 6.

Nat. Ord. *Personatæ.* *Linn.* 40. *Scrophulariæ.* *Juss.* 40.

See *Grammar* 101.

Cal. turbinate; border in 5 deep, lanceolate, acute, upright, nearly equal segments. *Cor.* somewhat bell-shaped; tube cylindrical, the length of the calyx; limb in 5 deep, ovate, spreading, slightly unequal segments, the 2 uppermost concave, lower one smallest. *Filam.* from the mouth of the tube, awl-shaped, almost equal, shorter than the limb, sheltered by its 2 upper segments, but spreading slightly laterally, and converging in pairs. *Anth.* roundish, of 2 lobes. *Germ.* ovate. *Style* tapering, short. *Stigma* capitate, globose, cloven. *Caps.* ovate, of 2 cells, and 2 valves, the partitions narrow, from the inflexed margins of the valves. *Seeds* numerous, oblong, furrowed, transversely wrinkled, covering a large, ovate, central *receptacle*.

The *partitions*, at first connected with the *receptacle*, separate from it as the *capsule* advances to maturity, so that the latter finally consists of but one cell; which is the case in *Verbascum*, and more or less with many other seed-vessels similarly constructed. No doubt can remain as to the natural order of *Limosella*; nor do I perceive the propriety of considering it as belonging to the *Preciæ* of Linnæus, the *Lysimachiæ* of Jussieu, though those great authorities are against me, and some later ones have traced an affinity to that tribe in the seed-vessel, which is surely altogether that of the *Scrophularinæ* of my learned friend Mr. Brown, who appears to have taken the most correct view of the subject.

This genus consists of a very few herbaceous, creeping, marsh plants, with simple, entire, stalked, linear or spatulate, aggregate *leaves*, and small, solitary, axillary, pale *flowers*, on simple naked *stalks*.

1. *L. aquatica.* Common Mudwort.

Leaves lanceolate, somewhat spatulate. Footstalks twice as long as the flower-stalks.

L. aquatica. *Linn. Sp. Pl.* 881. *Willd.* v. 3. 341. *Fl. Br.* 668. *Engl. Bot.* v. 5. t. 357. *Hook. Lond.* t. 62. *Scot.* 190. *Fl. Dan.* t. 69.

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L. n. 300. *Hall. Hist. v. 1. 132.*

L. annua, flore albo monopetalo, &c. *Lind. Alsat. 266.*

Plantaginella. *Rupp. Jen. ed. Hall. 23. t. 6. f. 3.*

P. palustris. *Raii Syn. 278. Moris. v. 3. 605. sect. 15. t. 2.*

Spergula perpusilla, lanceatis foliis. *Loes. Pruss. 261. t. 81.*

Alsine palustris repens, foliis lanceolatis, floribus albis perexiguis.
Pluk. Almag. 20. Phyt. t. 74. f. 4.

A. palustris exigua, foliis lanceolatis, &c. *Mentz. Pugill. 2. t. 7.*

In muddy spots, where water has stagnated during winter, not very uncommon.

First noticed in Suffolk, on the Denes at Lowestoft, in 1808, by Mr. R. Brown.

Annual. *July, August.*

Root fibrous, throwing out naked runners, which fix themselves at the ends by fresh fibres, and form new plants. *Herb* diminutive, quite smooth. *Leaves* lanceolate, bluntish, erect or spreading, an inch long; on *footstalks* twice that length, sheathing at the base. *Fl.* on shortish, crowded, axillary *stalks*, about half an inch long, or more, recurved after the blossoms are past. *Cor.* white or flesh-coloured. *Caps.* hardly bigger than mustard-seed.

315. OROBANCHE. Broom-rape.

Linn. Gen. 321. Juss. 101. Fl. Br. 668. Tourn. t. 81. Lam. t. 551.

Nat. Ord. *Personatæ*. *Linn. 40. Pediculares. Juss. 35. Scrophularinæ.* *Br. Prodr. 433. Orobanchæ* of Richard.
Hook. Scot. 222.

Cal. of 2 lateral, opposite, acute, coloured, undivided or cloven, permanent leaves. *Cor.* ringent, withering; tube ovate, curved, finally membranous; upper lip concave, notched, more or less dilated and spreading at the margin; lower reflexed, in 3, somewhat unequal, wavy lobes. *Nect.* a gland under the germen. *Filam.* from the base of the corolla, almost as long as the tube, awl-shaped, flattened and somewhat dilated downward, variously and partially downy and glandular. *Anth.* incumbent, of 2 lobes, rounded at the top and pointed at the lower ends, each opening by a longitudinal cleft in front. *Germ.* ovate-oblong. *Style* terminal, cylindrical, incurved, as long as the stamens. *Stigma* large, deflexed, of 2 or 3 distinct globular lobes. *Caps.* ovate, pointed, of 1 cell and 2 valves, with 2 longitudinal *receptacles* proceeding from the middle part of each valve. *Seeds* very numerous, minute, wrinkled, covering the receptacles.

Leafless scaly *herbs*, simple or branched, for the most part,

if not always, parasitical; their whole surface minutely downy, or mealy, brownish, dull purple, or red. *Fl.* more coloured, but withering, and turning brown, before the *corolla* falls. The *roots* are small, fibrous, generally attached to those of Broom, Furze, Clover, or other papilionaceous plants; some of them to Hemp.

* *Bracteas* solitary.

1. *O. major*. Greater Broom-rape.

Stem simple. Corolla inflated; upper lip slightly notched; lower with acute, nearly equal segments. Stamens quite smooth below. Style downy.

O. major. Linn. *Sp. Pl.* 882. Willd. v. 3. 347. *Fl. Br.* 669. *Engl. Bot.* v. 6. t. 421. Sutton *Tr. of Linn. Soc.* v. 4. 175. Curt. *Lond. fasc.* 4. t. 44. Hook. *Scot.* 190.

O. major, *Garyophyllum olens*. Raii *Syn.* *288; but not that of Bauhin.

O. altera Matthioli. Dalech. *Hist.* 485. f.

Rapum genistæ, sive Orobanche. Ger. *Em.* 1311?

In bushy places on a barren gravelly soil, growing on the roots of Broom or Furze.

Perennial. June, July.

Root of a few fibres. *Stem* about a foot high, erect, dusky, unbranched, angular, hollow, fleshy, clothed, like every other part, with short, rough, glandular pubescence, and beset with scattered, lanceolate, upright scales, in the place of leaves; the base tumid, ovate, clothed with smaller, more abundant scales. *Spike* terminal, simple, rather dense, of from 15 to about 20 flowers, of a dull purplish brown, without any scent, and after a while turning entirely brown, dry and membranous. *Bracteas* solitary under each flower, lanceolate, acute, rusty and downy. *Calyx-leaves* deeply cloven. Upper lip of the *corolla* large, sometimes slightly cloven, often entire and rather pointed; lower in 3 acute, nearly equal, wavy, sometimes crenate lobes. *Filam.* dilated and channelled, as well as perfectly smooth, in their lower half; glandular and downy at the summit. *Anth.* smooth, brown. *Germ.* downy all over, as well as the *style*. *Stigma* of 2 large, distant, globular, yellow lobes.

Haller's *n.* 295 appears, by his description of the smell, and by Swiss specimens, to be the real *O. major*, *garyophyllum olens* of Bauhin's *Pinax* 87; *O. caryophyllacea*, Sm. *Tr. of Linn. Soc.* v. 4. 169; though part of Haller's account applies rather to our *minor*, especially with regard to its being a troublesome weed. This *O. caryophyllacea* has been confounded by most former botanists with our *major*, as likewise with *elatio*r. Its *stamens* are hairy internally at the base. *Style* somewhat downy.

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2. *O. elatior*. Tall Broom-rape.

Stem simple. Corolla funnel-shaped; lower lip with acute, nearly equal segments. Stamens downy. Style smooth.

O. elatior. Sutton Tr. of Linn. Soc. v. 4. 178. t. 17. Willd. v. 3. 349. Fl. Br. 669. Engl. Bot. v. 8. t. 568. Fl. Dan. t. 1338, good.

O. major. Sibth. 191. Prof. Williams.

Orobanche. Matth. Valgr. v. 1. 489. f.

In clover fields, thickets, and bushy hilly places, on a gravelly soil, not uncommon; but never on the roots of Broom or Furze.

Rev. Dr. Sutton.

Perennial. July, August.

Taller, and of a more yellowish hue than the former, with flowers of a lighter purple, more wavy in their margins; their upper lip lobed. They are commonly three times more numerous in the spike than in that species, and of a smaller size. But their clearest and most essential difference, first remarked by Dr. Sutton, consists in the *stamens* being downy in their lower half, within-side, and smooth at the top; while the *germen* and *style* are all over perfectly smooth. The *stamens* proceed from a higher part of the tube than in *O. major*.

3. *O. minor*. Lesser Broom-rape.

Stem simple. Corolla nearly cylindrical; lower lip with curled segments, the middle one largest and lobed. Stamens fringed. Style smooth.

O. minor. Fl. Br. 670. Engl. Bot. v. 6. t. 422. Sutton Tr. of Linn. Soc. v. 4. 179. Willd. v. 3. 350. Fl. Dan. t. 1219.

O. major. Loeft. It. 151. Herb. Linn. Bull. Fr. t. 359?

O. flore minore. Dill. in Raii Syn. *288. Bauh. Hist. v. 2. 781. f.

In clover fields abundantly.

Very frequent in Norfolk. Mr. Rayer observed it in Kent, and the Bishop of Carlisle near Crickhowel, Brecknockshire.

Annual? July, August.

Of much more humble growth than the last, and smaller in every part, with fewer flowers than *O. major*. The whole plant is generally of a light, but dingy, purplish hue, though occasionally of a uniform pale yellow; always turning brown and dry, like the others, in decay. Stem often wavy. Calyx-leaves unequally lobed, sometimes undivided. Cor. not at all tumid; upper lip unequally notched, not cloven, except from age or accident. Stam. thickly fringed in their lower part. Germ. and style smooth. Stigm. purple.

4. *O. rubra*. Red Fragrant Broom-rape.

Stem simple. Corolla somewhat tumid; upper lip cloven; lower in three nearly equal segments. Stamens fringed

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at the base. Style partially hairy. Calyx-leaves lanceolate, undivided.

O. rubra. *Engl. Bot.* v. 25. t. 1786. *Comp. ed.* 4. 107. *Hook. Lond.* 109. t. 105. †*Scot.* 191.

On basaltic rocks in Ireland and Scotland.

Plentifully at Cave hill, near Belfast. *Mr. Templeton.* At Staffa, and near Kirkaldy; also on the Giants' Causeway, where *Mr. Templeton* had previously found it. *Dr. Hooker.*

Perennial. *July.*

Root of numerous rather woody fibres, creeping along the unequal surface of the basaltic rocks, under a superincumbent soil of about five inches of decayed rock and zeolite. *Mr. Templeton* could never perceive the roots to be parasitical. *Dr. Hooker* observes that this species is entirely confined to basaltic rocks, covered with a very thin coat of earth. The whole plant is of a rusty purplish red, the *bracteas* rather browner. *Stem* a foot high, tumid and densely scaly at the base, clothed above with glandular viscid hairs. *Fl.* about 20, not very densely spiked, their scent powerful, resembling a honey-suckle, or pink. *Cal.* of 2 narrow, lanceolate, undivided leaves. *Cor.* but little inflated; upper lip cloven, lower in 3 rounded segments, all the margins crenate, and fringed with short glandular hairs. *Filam.* fringed and glandular at the base; *Dr. Hooker* says at the summit also. *Anth.* and *stigma* red; the latter sometimes with 3 lobes. *Style* partially glandular and hairy. *Germen* smooth.

* * *Bracteas three to each flower.*

5. *O. cærulea.* Purple Broom-rape.

Stem simple. *Bracteas* three. Upper lip of the corolla cloven and notched; lower in three equal entire segments. *Style* downy.

O. cærulea. *Villars Dauph.* v. 2. 406. *Fl. Br.* 671. *Engl. Bot.* v. 6. t. 423. *Sutton Tr. of Linn. Soc.* v. 4. 182. *Willd.* v. 3. 352.

O. purpurea. *Jacq. Austr.* t. 276.

O. ramosa β. *With.* 558.

O. n. 294. *Hall. Hist.* v. 1. 129.

O. n. 28, var. 1. *Gmel. Sib.* v. 3. 215. t. 46. f. 1.

O. quarta. *Lob. Ic.* v. 2. 269. f.

O. flore obsoleto majore. *Moris. sect.* 12. t. 16. f. 2; *the fig. at least.*

O. flore majore. *Ger. Em.* 1312. f.

Nidus avis flore et caule violaceo-purpureo colore. *Goodyer in Ger. Em.* 228, *no f.*

In grassy pastures near the sea.

† *Monotropa Hypopitys*, v. 2. 249, is also t. 105; its letter-press 110; that of the present 109.

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In the borders of fields in Hampshire. *Goodyer*. Near Northreps, Norfolk. *Mr. Scarles*, 1779. At Sheringham, Beeston and Northreps. *Rev. Dr. Sutton and Mr. W. Skrimshire*.

Perennial. *July*.

Root fibrous, parasitical on those of various herbaceous plants. *Stem* a foot high, more or less, unbranched, dark grey, minutely downy like the rest of the plant, angular, scarcely swelling at the base; scales brown, all rather distantly scattered. There are 2 smaller, interior, linear-lanceolate *bracteas*, besides the usual solitary one, to each *flower*. *Calyx-leaves* combined, rather unequally cloven. *Cor.* funnel-shaped, angular, curved, downy, of a greyish or blueish violet; upper lip ascending, cloven, with some intermediate notches; lower in 3 equal, lanceolate, entire lobes, with a white, elevated, divided palate. *Filam.* quite smooth. *Style* minutely downy.

The botanical history of this species is embroiled with that of the Linnæan *Orchis abortiva*, *Limodorum austriacum* of Clusius, whence the latter has wrongly been admitted into the list of British plants. See *Tr. of Linn. Soc.* v. 4. 164.

6. *O. ramosa*. Branched Broom-rape.

Stem branched. Bracteas three. Upper lip of the corolla deeply cloven; lower equally three-lobed; segments all rounded and entire. Style smoothish.

O. ramosa. *Linn. Sp. Pl.* 882. *Willd.* v. 3. 353. *Fl. Br.* 671. *Engl. Bot.* v. 3. t. 184. *Sutton Tr. of Linn. Soc.* v. 4. 185. *Dill. in Raii Syn.* *288. *Ger. Em.* 1312. f. *Bauh. Pin.* 88. *Bull. Fr.* t. 399.

O. n. 296. *Hall. Hist.* v. 1. 130.

Orobanche. *Camer. Epit.* 311. f. *Lob. Ic.* v. 2. 270. f.

In low moist rich fields, attached to the roots of Hemp.

Near Beccles, Suffolk. *J. Sherard*. In hemp fields at Brome, Norfolk, and Mettingham, Suffolk. *Mr. Woodward*. At Outwell, Norfolk. *Rev. Dr. Sutton*. Near Wisbeach. *Rev. Mr. Relhan*. Annual. *August, September*.

Root fibrous; sometimes diseased and tumid, probably from the attacks of an insect, as represented in *Engl. Bot.* *Stem* more or less branched, rather wavy, a little downy; the scales few and scattered. *Fl.* loosely spiked, light purple; the 5 segments of the *corolla* nearly equal; *palate* downy, yellowish. *Bracteas* each accompanied by a pair of interior, very narrow ones. *Filam.* shortish, somewhat fringed at the base. *Germ.* roundish, smooth. *Style* nearly or quite smooth. *Stigma* white.

In the south of Europe the *flowers* are more highly coloured than with us, as well as larger.

The withering, not deciduous, *corolla* in this genus and *Lathræa*, p. 126, seems scarcely sufficient, as a technical character, to establish a separate natural order, nor will analogy permit us to take into account, for this purpose, their parasitical mode of growth.

Class XV. TETRADYNAMIA.

Stamens 6, 2 opposite ones shortest.

Order I. SILICULOSA. Fruit a short roundish pod, or pouch.

* *Cotyledons accumbent.*

- 318. DRABA. *Pouch* entire, laterally compressed; valves nearly flat. *Seeds* numerous.
- 316. VELLA. *Pouch* entire, with a prominent, dilated, flat style, twice as long as the concave valves.
- 330. CRAMBE. *Pouch* globose, stalked, coriaceous, of 1 cell, without valves, deciduous. *Seed* solitary.
- 329. CAKILE. *Pouch* angular, of 2 joints, each of 1 cell, without valves; the uppermost deciduous. *Seeds* solitary.
- 322. HUTCHINSIA. *Pouch* nearly entire; valves keeled, not bordered. *Seeds* 2, at least, in each cell. *Filaments* simple.
- 319. ALYSSUM. *Pouch* nearly entire, bordered, laterally compressed; valves concave. *Seeds* 1 or 2 in each cell. *Filam.* often toothed.
- 325. COCHLEARIA. *Pouch* nearly entire, turgid, rugged, of 2 valves. *Seeds* numerous.
- 324. THLASPI. *Pouch* cloven, inversely heart-shaped; valves with a bordered keel. *Seeds* numerous.
- 327. IBERIS. *Pouch* cloven, inversely heart-shaped. *Seeds* solitary. 2 outer *petals* largest.
- 323. TEESDALIA. *Pouch* cloven, inversely heart-shaped; valves keeled. *Seeds* 2 in each cell. *Filam.* each bearing a scale at the base.

** *Cotyledons incumbent.*

- 317. SUBULARIA. *Pouch* entire, transversely com-

pressed; valves tumid. *Seeds* numerous. *Cotyledons* linear.

328. ISATIS. *Pouch* entire, deciduous, bordered, transversely compressed, of 2 valves, and 1 cell. *Seed* solitary.
320. CAMELINA. *Pouch* entire; valves tumid. *Seeds* numerous, not bordered. *Filam.* all simple.
326. SENEBIERA. *Pouch* nearly entire, transversely compressed, wrinkled, of 2 cells, without valves. *Seeds* solitary in each cell.
321. LEPIDIUM. *Pouch* cloven, elliptical, of 2 cells, and 2 keeled valves. *Seeds* solitary in each cell.

Order II. SILIQUOSA. Fruit a long many-seeded pod.

* *Cotyledons* flat, accumbent.

337. CHEIRANTHUS. *Pod* rather compressed, straight. *Stigma* either of 2 spreading lobes, or capitate. *Cal.* closed; 2 of the leaves prominent at the base.
338. MATTHIOLA. *Pod* nearly cylindrical, straight. *Stigma* of 2 converging lobes, either thickened or protuberant at the back. *Cal.* closed; 2 of the leaves prominent at the base.
333. NASTURTIIUM. *Pod* nearly cylindrical, oblique; valves concave, without keels. *Stigma* obtuse, notched. *Cal.* spreading, equal at the base.
335. BARBAREA. *Pod* quadrangular, two-edged. *Seeds* in a single row. *Cal.* erect. *Glands* at the inside of the shorter filaments.
340. ARABIS. *Pod* linear; valves flat. *Seeds* in a single row.
341. TURRITIS. *Pod* linear; valves flat, keeled. *Seeds* in a double row.
332. CARDAMINE. *Pod* linear; valves flat, without ribs, bursting elastically from the base. *Seeds* on capillary stalks.
331. DENTARIA. *Pod* lanceolate; valves flat, without ribs, narrower than the partition, bursting elastically from the base. *Seeds* on flat dilated stalks.

**** Cotyledons flat, incumbent.**

334. **SISYMBRIUM.** *Pod* nearly cylindrical. *Stigma* capitate, notched.
339. **HESPERIS.** *Pod* inaccurately quadrangular. *Stigma* nearly sessile, of 2 converging lobes. *Cal.* closed; with 2 protuberances at the base. *Seeds* not bordered.
336. **ERYSIMUM.** *Pod* quadrangular. *Stigma* capitate, notched.

***** Cotyledons folded, incumbent.**

342. **BRASSICA.** *Pod* nearly cylindrical, beaked, with 2 valves. *Seeds* nearly globular. *Cal.* closed.
343. **SINAPIS.** *Pod* nearly cylindrical, somewhat beaked, with 2 valves. *Seeds* nearly globular. *Cal.* spreading.
344. **RAPHANUS.** *Pod* tumid, imperfectly jointed, without valves. *Seeds* globular.

This whole class, except the exotic genus *Cleome*, which has been forced into it, constitutes an entirely natural order, the *Cruciferae* of recent authors; which is indeed so natural and distinct, that we can hardly trace the least affinity between it and any other tribe. The artificial system leaves it undisturbed; not requiring the separation of any genus from the rest, nor properly introducing any that does not belong to them; for whatever may become of *Cleome*, it ought not to encumber this class, to which it has no natural affinity, nor has it even the artificial character, except in a very few species.

Cruciferae. Juss. 63. DeCand. Syst. v. 2. 139. *Siliculosae.* Linn. 39.

Flowers all complete and perfect, having a *calyx* and *corolla*, with *stamens* and *pistil*, in every individual.

Calyx inferior, of 4 ovate-oblong, concave, obtuse, usually converging leaves, opposite in pairs; prominent at the base; very sleek within; deciduous.

Corolla what is termed *cruciform*, *Introd. f.* 156, 157, consisting of 4 *petals*, alternate with the *calyx*, almost invariably regular and equal; their *claws* erect, tapering

downwards, rather longer than the calyx; *border* of each spreading almost horizontally, dilated outward, obtuse, often oblique.

Nectary of 2 or 4, opposite, mostly dark-green, *glands*, at the base of the stamens, especially within the 2 shortest, which therefore are curved outwards.

Stamens 6; *filaments* awl-shaped, erect, shorter than the corolla, in some few instances furnished with a lateral tooth, or an interior scale; 2 shortest opposite, solitary; 4 longest in opposite pairs. *Anthers* mostly erect, oblong.

Germen superior. *Style* short, or wanting. *Stigma* obtuse, various in structure, often much changed after impregnation, permanent.

Pod roundish or oblong, of 2 valves, (rarely jointed and not bursting,) mostly of 2 cells, with a parallel partition, projecting more or less at the summit, the valves separating at their base.

Seeds roundish, or flattened, on slender stalks, from both sides of the *receptacle*, which borders the partition. *Albumen* none. *Cotyledons* 2, either flat or folded, or spiral; either incumbent, lying upon the *embryo* laterally, or *accumbent*, their edges at one side meeting the *embryo* longitudinally.

These last characters, first noticed by Gærtner, and very easy of detection as soon as the *skin* of the seed is removed, there being no separate *albumen*, have been found by Mr. Brown to afford the most natural, and indeed absolute, primary characters of these plants. They serve to divide the whole into great natural sections, liable, as far as I can find, to no exception, the genera under each section being easily characterized, and proving much more natural, in habit and fructification, than those formed by Linnæus, on the nectariferous glands, or other circumstances.

The *cruciferæ* are for the most part europæan, generally herbaceous, or, if shrubby, of humble growth. *Pubescence* either simple, woolly, starry, or wanting. *Stem* round. *Leaves* almost always alternate, simple; undivided, or deeply divided, jagged and toothed; in some few cases compound. *Fl.* in clusters, or corymbs, almost invariably destitute of *bracteas*, mostly white or yellow, sometimes red, seldom blue, or brownish; often fragrant, especially at night. About 900 species are enumerated by DeCandolle, but their number might perhaps be greatly re-

duced. Their qualities are rather acrid, most wholesome in a boiled state; the *seeds* warm and pungent.

Prof. DeCandolle follows Mr. Brown's principles, but refines still more in the generic distinctions, and abolishes the Linnæan orders, though he acknowledges them to be commodious. I retain these orders, thinking them liable to as few difficulties or ambiguities as almost any systematical contrivance whatever. They are but two.

1. SILICULOSA. Those whose seed-vessel is a short, roundish *pod*, denominated a *pouch*. In these the *seeds* are sometimes very few, or even solitary; the *plants* are of more humble stature, though most inclined to be shrubby.

2. SILIQUOSA. *Pod* much elongated, linear or cylindrical, with numerous *seeds*; rarely jointed. *Plants* larger and more upright, generally herbaceous.



TETRADYNAMIA SILICULOSA.

316. VELLA. Cress-rocket.

Linn. Gen. 331. *Juss.* 241. *Fl. Br.* 675. *Br. in Ait. H. Kew. ed. 2.* v. 4. 79. *DeCand. Syst. v. 2.* 639. *Lam. t.* 555. *Gærtn. t.* 141. *Carrichtera. DeCand. Syst. v. 2.* 641.

Cal. erect, equal at the base, deciduous; leaves oblong, acute. *Pet.* obovate, undivided; their claws as long as the calyx. *Filam.* awl-shaped, 4 of them longer than the calyx, in one instance combined in pairs. *Anth.* somewhat heart-shaped, bluntish. *Germ.* ovate. *Style* vertical, dilated, elliptical, leafy, longer than the germen, permanent. *Stigma* obtuse. *Pouch* ovate, terminated by the hardened style; valves concave; partition membranous, continued into the style. *Seeds* few in each cell, globose, pendulous; cotyledons folded together, accumbent.

Species few, one herbaceous, two shrubby. *Leaves* various. *Fl.* yellowish, erect.

156 TETRADYNAMIA—SILICULOSA. Subularia.

1. *V. annua*. Annual Cress-rocket.

Leaves doubly pinnatifid. Pouches deflexed.

V. annua. *Linn. Sp. Pl.* 895. *Willd. v. 3.* 422. *Fl. Br.* 675. *Engl. Bot. v. 21. t. 1442.*

Nasturtium sylvestre, *Erucae* affine. *Bauh. Pin.* 105. *Raii Syn.* 304. *Moris. v. 2.* 301, *sect. 3. t. 19. f. 8.*

N. sylvestre valentinum. *Clus. Hist. v. 2.* 130. *f. Bauh. Hist. v. 2.* 920. *f.*

N. sylvestre Clusii. *Dalech. Hist.* 657. *f.*

Eruca nasturtio cognata tenuifolia. *Ger. Em.* 247. *f. Lob. Ic.* 205. *f.*

Valencia Cress. *Petiv. H. Brit. t. 50. f. 5.*

In sandy fields, but very rarely.

Found by Mr. Lawson, on Salisbury plain, not far from Stonehenge.

Ray. I have never heard of its being met with since.

Annual. *June.*

Root small, tapering. *Stem* erect, bushy, rough with deflexed bristles, leafy, about a span high. *Leaves* scattered, doubly pinnatifid, with linear, bluntish, decurrent segments. *Fl.* rather small, pale yellow, with purplish veins. *Pouch* ribbed, bristly, surmounted by the oval, curved, smooth, ribbed, rigid *Style*. *Seeds* 4 in each cell; M. DeCandolle remarks that they become covered with a glutinous exudation, on being immersed in warm water. The expanded *cotyledons*, remaining for some time on the stem, are inversely heart-shaped, flat, quite smooth and even.

317. SUBULARIA. Awl-wort.

Linn. Gen. 332. *Juss.* 240. *Fl. Br.* 676. *Br. in Ait. H. Kew. v. 4.* 91. *DeCand. Syst. v. 2.* 697.

Draba f. 3. Lam. t. 556.

Cal. erect, equal at the base, deciduous; leaves oval, concave, uniform. *Pet.* obovate, entire, spreading; their claws shorter than the calyx. *Filam.* simple. *Anth.* of 2 round lobes. *Germ.* ovate, compressed. *Style* none. *Stigma* flat, quite sessile. *Pouch* elliptic-oblong, compressed transversely, entire, tipped with the stigma, of 2 cells; valves deeply concave, boat-like, but not keeled; partition membranous, elliptical, parallel to the valves, but crossing the narrowest diameter of the pouch. *Seeds* ovate, 4 or more in each cell; *cotyledons* linear, incumbent.

Only one species, a small aquatic herb.

1. *S. aquatica*. Water Awl-wort.

S. aquatica. Linn. *Sp. Pl.* 896. Willd. *v.* 3. 423. *Fl. Br.* 676. *Engl. Bot.* *v.* 11. *t.* 732. Hook. *Scot.* 196. *Lond.* *t.* 135. Dicks. *H. Sicc. fasc.* 5. 9. *Fl. Dan.* *t.* 35.

S. erecta, *junci foliis acutis mollibus*. Raii *Syn.* 307.

Graminifolia aquatica, *thlaspeos capitulis rotundis, septo medio siliculam dirimente*. Pluk. *Almag.* 180. *Phyt.* *t.* 188. *f.* 5.

Gramen junceum hibernicum minus, *thlaspios capitulis Sherardi*. Moris. *v.* 3. 229. *sect.* 8. *t.* 10. *f.* 29.

Irish Rush Cress. Petiv. *H. Brit.* *t.* 48. *f.* 8.

On the sandy or gravelly bottoms of alpine lakes, under water.

In Lough Neagh, Ireland. Sherard. Lough Carran, Scotland.

Dr. Hope. In several other Scottish lakes. Hooker. Also in many of the Welsh lakes. Huds. *Mr. Griffith, and Rev. W. Bingley*.

Annual. July.

Root of numerous, long, white, simple fibres. Stem none. Herb quite smooth. Leaves several, awl-shaped, spreading, an inch or two in length. Fl. few, white, minute, in a simple, stalked, radical, zigzag cluster. Pouches erect. Their partition is erroneously described in *Fl. Br.* and *Engl. Bot.* as "contrary to the valves"; whereas it is contrary to the greatest diameter of the seed-vessel.

Dr. Hooker confirms our account of the flowers being always several feet under water, where he observed them to be constantly expanded, so that the impregnation actually takes place in that element. The pollen has not been examined. By the excellent plate of this author, so great in botanical dissections, it appears that the radicle is not closely applied to the cotyledons, but they together form a curve, whose two extremities are distant from each other. This I presume is expressed by *cotyledones bicrures* in Mr. Brown's generic definition.

318. DRABA. Whitlow-grass.

Linn. *Gen.* 333. Juss. 240. *Fl. Br.* 677. *Br. in Ait. H. Kew.* *v.* 4. 91.

DeCand. *Syst.* *v.* 2. 331. Lam. *t.* 556. *f.* 1, 2. Gertn. *t.* 141.

Erophila. DeCand. *Syst.* *v.* 2. 356.

Cal. equal at the base, somewhat spreading, deciduous; leaves ovate, concave. *Pet.* either cloven, notched or entire, spreading, with short claws. *Filam.* simple. *Anth.* of 2 roundish lobes. *Germ.* ovate. *Style* very short, or none. *Stigma* capitate, flat. *Pouch* oblong-oval, laterally compressed, entire, tipped with the style or stigma, of 2 cells; valves nearly flat, separating from the bottom; partition membranous, of the same shape and breadth.

Seeds many in each cell, small, roundish, without a border; cotyledons accumbent.

A numerous herbaceous genus; its pubescence forked or starry. *Leaves* undivided. *Fl.* white or yellow, without *bracteas*. DeCandolle has 59 species, (I think them too many,) besides 6 of his *Erophila*, separated from *Draba* merely because of the cloven *petals*, an ambiguous character, some acknowledged *Drabæ* having those parts occasionally notched or entire.

1. *D. verna*. Common Whitlow-grass.

Stalks radical, naked. Petals deeply cloven. Leaves lanceolate, somewhat notched, hairy.

D. verna. Linn. *Sp. Pl.* 896. Willd. *v.* 3. 426. *Fl. Br.* 677. *Engl. Bot.* *v.* 9. *t.* 586. Curt. *Lond. fasc.* 1. *t.* 49. Hook. *Scot.* 196. *Fl. Dan.* *t.* 983.

D. n. 496. Hall. *Hist.* *v.* 1. 215.

Erophila vulgaris. DeCand. *Syst.* *v.* 2. 356.

Paronychia vulgaris. Raii *Syn.* 292. Ger. *Em.* 624. *f.* Dod. *Pempt.* 112. *f.*

P. alsinefolia. Lob. *Ic.* 469. *f.* Dalech. *Hist.* 1214. *f.*

Whitlow Cress. Petiv. *H. Brit.* *t.* 48. *f.* 6.

Notched Whitlow Cress. *f.* 7.

On walls, banks, and dry waste ground, abundantly.

Annual. March, April.

Root fibrous, of considerable length. *Stem* none. *Leaves* several, forming a star close to the ground, oblong-lanceolate, entire, or in β notched, clothed with simple as well as forked hairs. *Flower-stalks* one or more, radical, round, wavy, smooth, leafless, each bearing a corymbose cluster of several inodorous white flowers. *Pet.* cloven half way down. *Pouch* smooth, veiny.

2. *D. aizoides*. Yellow Alpine Whitlow-grass.

Stalks solitary, naked. Petals slightly notched, twice the length of the calyx. Leaves lanceolate, rigid, keeled, fringed.

D. aizoides. Linn. *Mant.* 91. Willd. *v.* 3. 424. *Fl. Br.* 1400. *Comp. ed.* 4. 109. *Engl. Bot.* *v.* 18. *t.* 1271. Jacq. *Austr.* *t.* 192. DeCand. *Syst.* *v.* 2. 333. Don *H. Brit. fasc.* 8. 186; *cultiv. specimens*.

D. n. 498. Hall. *Hist.* *v.* 1. 215.

Sedum petræum. Ger. *Em.* 514. *f.*

S. petræum montanum. Lob. *Ic.* 381. *f.*

S. alpinum sextum. Clus. *Pann.* 491. *f.* Hist. *v.* 2. 62. *f.*

Bursa pastoris alpina rosea lutea, &c. Moris. *v.* 2. 306. *sect.* 3. *t.* 20. *f.* 9.

TETRADYNAMIA—SILICULOSA. *Draba*. 159

On walls and rocks in South Wales.

Near Wormshead, 16 miles west of Swansea, where it was discovered in 1795, by John Lucas, Esq. *Engl. Bot.* About Pen-nard castle, near Swansea, abundantly, in inaccessible spots. *W. Turton, M.D.*

Perennial. *March, April.*

Stems tufted, repeatedly branched in a determinate manner, the leafy branches of the present year bearing each a solitary, terminal, naked *stalk*, with a few bright yellow corymbose *flowers*. *Leaves* very numerous, closely imbricated, linear-lanceolate, rigid, of a shining green, keeled, fringed with white bristly hairs. Prof. DeCandolle esteems the plant figured in *Curt. Mag. t. 170*, to be a distinct species, of a more lax growth, with shorter *stamens*. This is doubtless *D. ciliaris* of the Linnæan herbarium, and *Mantissa* 91, but I should think its differences owing to cultivation. See a figure and description in *Gerard Galloprov. 344. t. 13. f. 1*. The keel of the *leaves* is but seldom, if ever, fringed.

3. *D. hirta*. Simple-haired Whitlow-grass.

Stalk nearly leafless. Petals undivided. Pouch elliptic-oblong. Leaves lanceolate, slightly toothed, fringed with simple hairs.

D. hirta. *Linn. Sp. Pl.* 897. *Willd. v. 3.* 430. *Fl. Br.* 677. *Engl. Bot. v. 19. t. 1338.* *Don H. Brit. fasc. 8.* 185.

D. stellata. *Dicks. Tr. of Linn. Soc. v. 2.* 288. *Crypt. fasc. 2.* 29. *With. 565.* *Hull 143*; but not of Jacquin.

D. pyrenaica. *Fl. Dan. t. 143*; not of Linnæus.

D. rupestris. *Br. in Ait. H. Kew. v. 4.* 91. *DeCand. Syst. v. 2.* 344. *Hook. Scot. 196.*

On rocks in the Highlands of Scotland.

Upon Ben Lawers. *Mr. Dickson*. On rocks near the summit. *Mr. G. Don.*

Perennial. *May, June.*

Root slender, somewhat creeping, subdivided at the crown, bearing several tufts of copious, spreading, lanceolate, bluntish, flat, deep-green *leaves*; tapering at the base; a little wavy, or slightly notched, at the margin, fringed with constantly simple bristly hairs, such as are scattered, more or less sparingly, over both surfaces, where a few forked, not stellated, ones are occasionally intermixed. *Stalk* solitary, slightly curved or wavy, 2 or 3 inches high, round, simply hairy, either quite leafless, or bearing, near the bottom, and sometimes under the lowermost flower, a solitary leaf, like the radical ones, though smaller, and by no means dilated, ovate, or strongly serrated. *Fl.* small, white, densely corymbose. *Cal.* somewhat hairy. *Pet.* obovate, with a shallow notch, erect, twice as long as the calyx. *Pouches* in a long, unequal, or interrupted, upright cluster, with hairy partial stalks, about half their own length; their form elliptic-oblong rather than

lanceolate, compressed but not flat, tipped with the very short thick *style* and capitate *stigma*; their valves usually rough with minute, forked, spreading, rigid, white hairs; but they are sometimes quite smooth and naked, as in one of the Linnæan, and some of our Scottish specimens.

After a careful re-examination, I cannot but confirm the descriptions and synonyms of *Fl. Br.* and *Engl. Bot.* The figure in the latter work is correct, if not luxuriant. No wonder Dr. Wahlenberg could not find in it the characters of his *D. hirta*, that being, as I presume, a different species, characterized by one, two, or three ovate, strongly toothed or serrated leaves on its stalk, or stem. I have such from Lapland, gathered by Dr. Swartz. The *pouches* and *stalks* are, as in the real *D. hirta*, either minutely hairy or smooth. I must leave Dr. Hooker's *hirta* for future examination, as he refers to Jacquin's *hirta*, *Fl. Austr. t.* 432, a totally different species, which is Haller's *n.* 497, well known in Switzerland, but not in Britain. Bauhin's *Bursa pastoris alpina hirsuta*, *Prodr.* 51. *f.*, agrees in the stem-leaves with Swartz's and Wahlenberg's plant, but the description of its soft and hoary radical foliage answers better to Jacquin's.

4. *D. incana*. Twisted-podded Whitlow-grass.

Stem-leaves numerous, hoary, like the stem, with close starry pubescence. Pouch elliptic-oblong, oblique or twisted, longer than the hairy partial stalks.

D. incana. *Linn. Sp. Pl.* 897. *Fl. Suec. ed.* 2. 224. *Willd. v.* 3. 430. *Fl. Br.* 430. *Engl. Bot. v.* 6. *t.* 388. *Hook. Scot.* 197. *Don H. Brit. fasc.* 8. 187. *Wahlenb. Lapp.* 176. *Fl. Dan. t.* 130. *Ehrh. Phyt.* 75.

D. contorta. *Ehrh. Beitr. v.* 7. 155. *DeCand. Syst. v.* 2. 348.

Lunaria contorta major. *Raii Syn.* 291.

Leucojum, sive *Lunaria*, vasculo sublongo intorto. *Pluk. Almag.* 215. *Phyt. t.* 42. *f.* 1.

Wreathed Cress. *Petiv. H. Brit. t.* 48. *f.* 3.

β. *Paronychiæ similis sed major, perennis alpina repens*. *Raii Syn. ed.* 2. 165. *ed.* 3. 292.

Small Wreath Cress. *Petiv. H. Brit. t.* 48. *f.* 4.

On alpine limestone rocks.

On the summits of the mountains of Wales, Westmoreland, and Scotland. Upon the top of Ingleborough, Yorkshire. *Mr. Woodward*. Upon Ben Lawers, Loch-na-gair, and Cairn-gorm. *Mr. G. Don*. On heaths, on the east coast of Sutherland, near Wilk-house inn. *Dr. Hooker and Mr. Borrer*.

Biennial. *May, June*.

Root long, tapering, with numerous capillary radicles. *Herb* all over hoary, with minute, starry, crowded and close-pressed hairs, very variable in stature and luxuriance, like most biennial or annual plants, according to the moisture or nourishment it receives. *Stem* from 2 to 12 inches high in a wild state, 2 feet

when cultivated, simple or somewhat branched, copiously leafy, its starry pubescence accompanied by, or sometimes in the lower part changed for, fine long simple hairs. Radical *leaves* elliptic-lanceolate, forming in the first season a dense rose-like tuft; those of the stem, the following year, very numerous, scattered, sessile, ovate, ribbed, variously toothed or cut, seldom, except in starved plants, quite entire. *Fl.* numerous, white. *Cal.* hairy. *Pet.* inversely heart-shaped, twice the length of the calyx, with taper claws. Partial *flower-stalks* very hairy, scarcely half the length of the *pouch*, which is about half an inch long, elliptic-lanceolate, or oblong, more or less oblique, uneven, or twisted half-round, flat not tumid, the edges thick, the summit crowned with the extremely short thick *style*, and depressed capitate *stigma*. The surface of the *pouch* in British specimens I find to be always smooth. Ehrhart's specimens of his *D. incana*, or *Holarges*, *Phytoph.* 75, are not in fruit, but one of the germens carefully examined, proved only slightly and partially hairy, and could not possibly have produced a hoary *pouch*. Yet this synonym is applied by Ehrhart to his own *D. confusa*, whose *pouch* should be downy, while DeCandolle refers it, by my specimens, to his *D. contorta*, my *incana*. From all that I have seen, as well as from the analogy of the preceding species, I am satisfied that the smoothness or roughness of the fruit affords but a trivial distinction, and DeCandolle seems of the same opinion. The figure in *Engl. Bot.* taken from a wild seedling, made to blossom in a garden, is therefore over luxuriant; but being very faithful in every particular does not deserve to be stigmatized as "bad."

5. *D. muralis*. Speedwell-leaved Whitlow-grass.

Stem branched. Leaves heart-shaped, toothed, hairy. Pouch elliptical, obtuse, flat, shorter than the partial stalks.

D. muralis. Linn. *Sp. Pl.* 897. Willd. v. 3. 429. *Fl. Br.* 679. *Engl. Bot.* v. 13. t. 912. Hook. *Scot.* 197. *Lond.* t. 64. Scop. *Insubr. fasc.* 2. t. 15. DeCand. *Syst.* v. 2. 352. Don. *H. Brit. fasc.* 8. 188. *D. n.* 499. Hall. *Hist.* v. 1. 215.

D. minima muralis discoides. Column. *Ecphr.* v. 1. 274. t. 272.

Bursa pastoris major, *loculo oblongo*. Bauh. *Pin.* 108. *Prodr.* 50. f. *Raii Syn.* 292. *Moris.* v. 2. 305 *sect.* 3. t. 20. f. 5.

Speedwell Cress. *Petiv. H. Brit.* t. 48. f. 5.

Myagroides subrotundis serratisque foliis, flore albo. Barrel. *Ic.* t. 816.

On the shady sides of limestone mountains, or on walls, but rare. In several parts of Craven, Yorkshire. Ray. About Malham Cove.

Dr. Richardson and others. At Old Malton, on walls. Rev. Archdeacon Peirson. On the Wardon Hills, Bedfordshire. Rev. Dr. Abbot. On dry banks at Emborough, Somersetshire. Mr. Sole.

162 TETRADYNAMIA—SILICULOSA. *Alyssum*.

Naturalized on the walls of Chelsea garden, as likewise about the botanic garden Edinburgh.

Annual. *April, May.*

Very unlike all our other species. *Root* tapering. *Stem* erect, alternately branched, unless very weak, from the base, from 6 to 18 inches high, leafy, rough, with minute starry hairs. *Radical leaves* several, depressed, obovate, tapering at the base; those of the stem scattered, sessile, heart-shaped; all strongly serrated or toothed, and clothed with short, either simple, forked or stellated, hairs. *Fl.* very numerous, small, white, in a little dense corymbose tuft, soon lengthened out into an extremely long cluster of spreading *pouches*, whose stalks are either smooth or hairy. *Cal.*, as Dr. Hooker observes, generally smooth; but occasionally hairy as in *Engl. Bot.* *Pet.* obovate, entire. *Style* scarcely any. *Stigma* blunt, very small. *Pouch* about half the length of its stalk, elliptical, obtuse, flat, even and smooth, with 6 or 8 *seeds* in each cell, which, as DeCandolle remarks, are twice as numerous in *D. nemoralis*, the *pouches* of which are finely downy, on longer and smooth stalks, and the *leaves* ovate-oblong.

319. ALYSSUM. *Alyssum*.

Linn. Gen. 335. *Juss.* 240. *Fl. Br.* 659. *Br. in Ait. H. Kew.* v. 4. 93. *DeCand. Syst.* v. 2. 301. *Lam. t.* 559. *Gærtn. t.* 141.

Cal. equal at the base, cup-shaped, deciduous; leaves ovate, concave, uniform. *Pet.* obovate, entire, or slightly notched, flat, spreading, with short claws. *Filam.* about the length of the calyx, often furnished with a lateral tooth, or notch. *Anth.* of 2 roundish lobes. *Germ.* orbicular, or elliptical, compressed. *Style* short. *Stigma* simple, small. *Pouch* orbicular, oval, or obovate, laterally compressed, tipped with the style, of 2 cells; valves flattish, or tumid chiefly in the middle; partition membranous, of the same shape and breadth. *Seeds* 1 or 2 in each cell, oval, compressed, rarely bordered; cotyledons accumbent.

Small herbaceous or shrubby plants, downy, or hoary, with simple or starry pubescence, usually much branched and leafy. *Leaves* undivided, mostly narrow and entire. *Fl.* white or yellow.

1. *A. maritimum*. Sweet Alyssum.

Stem somewhat woody, much branched, spreading. Leaves lanceolate, acute, entire, hoary with close hairs. Stamens simple. Seeds solitary.

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A. maritimum. Willd. v. 3. 459. Engl. Bot. v. 25. t. 1729. Br. in Ait. H. Kew. v. 4. 95. DeCand. Syst. v. 2. 318.

A. minimum. Linn. Sp. Pl. 908. Herb. Linn.

A. halimifolium. Curt. Mag. t. 101.

Clypeola maritima. Linn. Sp. Pl. 910. Mant. 2. 426.

Thlaspi Alyssum dictum maritimum. Bauh. Pin. 107. Moris. v. 2. 291. sect. 3. t. 16. f. 1.

T. maritimum. Dalech. Hist. 1393. f.

T. linifolium minus cineritium, flore albo. Barrel. Ic. t. 908. f. 1. good.

T. narbonense Lobelii. Ger. Em. 267. f.

On banks and cliffs near the sea.

Near Aberdeen. Prof. W. Duncan. At Budleigh-Salterton, Devonshire. Dr. Hooker. Not wild in the latter place. Rev. J. Jervis.

Perennial. August, September.

Stem much branched from the base, recumbent, leafy, though woody not very durable; and in gardens, where this plant is cultivated for the sake of its honey-scented flowers, it is generally treated as an annual. The herbage is hoary, or rather glaucous, with close-pressed silvery hairs. *Leaves* linear-lanceolate, tapering at the base. *Fl.* very abundant, in dense, tufted, or corymbose, clusters, much elongated when in fruit. *Pet.* roundish, of a brilliant white; but in fading their claws, like the *stamens*, assume a violet hue. *Pouch* orbicular, smooth and polished, a little tumid, with one seed in each cell.

320. CAMELINA. Gold of Pleasure.

Crantz Austr. fasc. 1. 17. Br. in Ait. H. Kew. v. 4. 93. Comp. ed. 4 108. DeCand. Syst. v. 2. 514.

Cal. equal at the base, oblong, deciduous; leaves elliptic-oblong, uniform, moderately spreading. *Pet.* obovate-oblong, undivided, their claws rather shorter than the spreading border. *Filam.* thread-shaped, simple. *Anth.* oblong-heart-shaped. *Germ.* roundish. *Style* cylindrical, erect. *Stigma* simple, obtuse. *Pouch* obovate, obtuse, rarely globular, tumid, of 2 cells; valves concave, confluent with the permanent style; partition membranous. *Seeds* numerous in each cell, oblong, compressed, not bordered; cotyledons incumbent.

Upright, mostly branched, herbs, with oblong leaves, clasping the stem. *Fl.* yellow, in corymbose clusters. *Pouches* erect, on long partial stalks. The incumbent cotyledons oblige us to separate the present genus from *Alyssum*.

The name of *Myagrum*, as Prof. DeCandolle remarks, properly belongs to this genus; but that is now appropriated to *M. perfoliatum*, and *Camelina* though barbarous, and

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apparently corrupted from *Chamælinum*, (which in itself would be totally inadmissible,) is not ill-sounding, and has long been applied to our plant.

*1. *C. sativa*. Common Gold of Pleasure.

Pouches obovate, bordered, twice as long as the style.
Leaves lanceolate-arrow-shaped.

C. sativa. *Crantz Austr. fasc.* 1. 17. *Br. in Ait. H. Kew.* v. 4. 93.
DeCand. Syst. v. 2. 515. *Comp. ed.* 4. 109. *Hook. Scot.* 198.
Lond. t. 70.

C. sive Myagrion. *Dod. Pempt.* 532. *f.*

Myagrum. *Raii Syn.* 302. *Ger. Em.* 273. *f.*

M. sativum. *Linn. Sp. Pl.* 894. *Willd.* v. 3. 408. *Fl. Dan. t.* 1038.
Cavan. Ic. v. 1. 47. *t.* 66. *Ehrh. Pl. Off.* 407.

Pseudo-myagrum. *Matth. Valgr.* v. 2. 515. *f.* *Dalech. Hist.* 1137. *f.*
Camer. Epit. 901. *f.* also *tertium* 902. *f.*

Sesama. *Trag. Hist.* 655. *f.*

Moenchia sativa. *Roth Germ.* v. 1. 274. *With.* 562. *Hull* 142.

Alyssum sativum. *Fl. Br.* 679. *Engl. Bot.* v. 18. *t.* 1254.

A. n. 489. *Hall. Hist.* v. 1. 212.

Gold of Pleasure. *Petiv. H. Brit. t.* 48. *f.* 11.

In cultivated fields, chiefly among Flax, with whose seeds it is often introduced from abroad, but does not long propagate itself with us spontaneously.

Annual. *June*.

Root fibrous. *Herb* smooth, or variously downy, erect, $1\frac{1}{2}$ or 2 feet high, more or less paniced. *Leaves* alternate, acute, bright green, 2 or 3 inches long, entire or toothed, clasping the stem with their arrow-shaped base. *Fl.* small, pale yellow, their corymbs soon becoming very long clusters of pear-shaped, bordered, smooth, inflated pouches, tipped with the styles, which latter are commonly longer than the figure in *Engl. Bot.* represents them; the stigma withering, they become acute as the fruit ripens, and are united at both sides with the valves, as *Crantz* observes. *Seeds* 6 or 8 in each cell.

The ridiculously pompous English name seems a satire on the articles of which it is composed, as yielding nothing but disappointment.

321. LEPIDIUM. Pepperwort.

Linn Gen. 333. *Juss.* 241. *Fl. Br.* 681. *Br. in Ait. H. Kew.* v. 4. 85. *DeCand. Syst.* v. 2. 527. *Tourn. t.* 103. *Lam. t.* 556. *Gærtn. t.* 141.

Cal. equal at the base, with elliptical, concave, nearly equal leaves. *Pet.* obovate, undivided, equal. *Filam.* simple, shorter than the petals, sometimes deficient in number.

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Anth. of 2 roundish lobes. *Germ.* roundish. *Style* slender, or wanting. *Stigma* obtuse. *Pouch* orbicular, or oblong, transversely compressed, either entire or notched at the summit, crowned with the style or stigma, of 2 cells; valves keel-shaped, sometimes bordered; partition very narrow, crossing the greater diameter of the pouch. *Seeds* 1 in each cell, pendulous, ovate, somewhat angular, or flattened; cotyledons oblong, incumbent.

Glaucous or hoary herbs, of a hot pungent flavour. *Stem* branched. *Leaves* very various. *Fl.* copious, white, minute.

1. *L. latifolium*. Broad-leaved Pepperwort.

Leaves ovate-lanceolate, undivided, serrated.

L. latifolium. Linn. *Sp. Pl.* 899. Willd. v. 3. 436. *Fl. Br.* 682. *Engl. Bot.* v. 3. t. 182. Hook. *Scot.* 194. DeCand. *Syst.* v. 2. 548. *Fl. Dan.* t. 557. *Raii Syn.* 304.

Lepidium. *Trag. Hist.* 88. f. *Fuchs. Hist.* 484. f. *Matth. Valgr.* v. 1. 557. f. *Camer. Epit.* 378, 379. f, f.

L. majus. *Cord. Hist.* 124, 2. f.

L. Plinianum. *Dod. Pempt.* 715. f. 716. *Moris.* v. 2. 312. sect. 3. t. 21. f. 1.

Nasturtium n. 505. *Hall. Hist.* v. 1. 219.

Raphanus sylvestris officinarum. *Ger. Em.* 241. f. *Lob. Ic.* 318. f.

In salt marshes, and wet sandy shady situations under cliffs, near the sea.

In several parts of Essex. *Ray*. Yorkshire. *Dr. Richardson*. Below Sheringham cliffs, Norfolk. *Mr. Humphrey*.

Perennial. *July*.

Roots acrid, very long, creeping and branched, running deep into the earth, and remaining for many years, if planted in sandy ground far from the sea. Whole herb smooth, of a dull glaucous green, its flavour disagreeably pungent and bitter. *Stems* a yard high, tough, branched, leafy, pale. *Lower leaves* a span in length, ovate, serrated about the middle, on long stalks; *upper* much smaller, and lanceolate, or linear, acute, nearly sessile, entire. *Fl.* numerous, very small, white, in compound, leafy, panicked, corymbose clusters. *Stamens* 6. *Pouch* elliptical, crowned with the sessile stigma.

A common Greek plant, the *Lepidion* of Dioscorides, who attributes an acrid ulcerating quality to its leaves, and it still bears the name of *Lepidi* in Attica.

2. *L. ruderale*. Narrow-leaved Pepperwort.

Stamens two. *Petals* none. *Leaves* smooth; lower ones pinnatifid, toothed; upper linear, entire. *Pouch* notched.

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L. ruderale. *Linn. Sp. Pl.* 900. *Willd. v. 3.* 440. *Fl. Br.* 682. *Engl. Bot. v. 23. t. 1595.* *Hook. Scot.* 194. *Fl. Dan. t. 184.* *DeCand. Syst. v. 2.* 540.

Nasturtium n. 508. *Hall. Hist. v. 1.* 220.

N. sylvestre, *Osyridis folio*. *Raii Syn.* 303.

Thlaspi minus. *Ger. Em.* 262. f.

T. angustifolium. *Fuchs. Hist.* 307. f. *Ic.* 175. f. *Dalech. Hist.* 662. f.

Thlaspidii genus. *Trag. Hist.* 83. f.

Narrow Wild Cress. *Petiv. H. Brit. t. 50. f. 1.*

In waste ground, especially near the sea, in a muddy or calcareous soil.

At Yarmouth, Cley, and Lynn, Norfolk, plentifully. At Truro, Cornwall, and Maldon, Essex. *Ray*. Below Bristol. *Withering*.

By the side of the Severn above Worcester. *Dr. Stokes*.

Annual. *June*.

Root tapering. *Herb* glaucous, smooth, fetid and pungent when bruised. *Stem* from 6 to 12 inches high, solitary, erect, leafy, with many wide-spreading branches. *Lower leaves* pinnatifid, which the figures of the old authors, except *Petiver*, do not exhibit; their segments are linear, partly toothed, especially at the fore side; *upper leaves* undivided, entire. *Fl.* minute, in dense corymbs, which when in seed become very long, rather crowded, clusters. I have never met with any *petals*, nor more than 2 *stamens*; but *Dr. Withering*, like *Scopoli* and *Gouan*, has often seen complete *flowers*, and sometimes 4 *stamens*. *Pouch* roundish, with a notch containing the very short, thick, permanent *style*.

3. *L. campestre*. Common Mithridate Pepperwort.

Pouch scaly, notched; bordered at the summit. *Style* very short. *Stem-leaves* arrow-shaped, toothed.

L. campestre. *Br. in Ait. H. Kew. v. 4.* 88. *Comp. ed.* 4. 110. *DeCand. Syst. v. 2.* 535. *Hook. Scot.* 195.

Thlaspi campestre. *Linn. Sp. Pl.* 902. *Willd. v. 3.* 444. *Fl. Br.* 684. *Engl. Bot. v. 20. t. 1385.* *Curt. Lond. fasc. 5. t. 45.*

T. vulgatus. *Raii Syn.* 305. *Bauh. Hist. v. 2.* 921. *upper f.*

T. latifolium. *Fuchs. Hist.* 306. f. *Ic.* 174. f.

Nasturtium n. 509. *Hall. Hist. v. 1.* 220.

Common Cow Cress. *Petiv. H. Brit. t. 50. f. 7.*

β. *Thlaspi Vaccariæ folio glabrum*. *Raii Syn.* 305.

T. vulgatissimum. *Ger. Em.* 262. f.

T. primum. *Matth. Valgr. v. 1.* 518. f. *Camer. Epit.* 336. f. *Dalech. Hist.* 662. f.

Smooth Cow Cress. *Petiv. H. Brit. t. 50. f. 8.*

γ. *Thlaspi hirtum*. *Huds.* 281.

In cultivated fields.

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β. Near Warrington. *Mr. D. Turner*.

γ. Near Bath. *Mr. Haviland*.

Annual. *July*.

Root tapering. *Herb* more or less downy, and of a hoary or glaucous green; the pubescence short, simple, and prominent. *Stem* erect, leafy, about a foot high; branched in the upper part, except in weak specimens. *Lowest leaves* obovate, soon withering; the rest sessile, arrow-shaped, acute at both ends, wavy and toothed in the most common and downy variety; in β nearly smooth, and more entire. *Fl.* numerous, small, white, their corymbs soon lengthened out into long clusters of upright, roundish-oblong *pouches*, whose flat border, very narrow at the sides, is much dilated, and cloven, at the upper edge, the *style* being about equal in length to the lobes. The surface at both sides of the *pouch* is covered with minute depressed scales, which mark this species well, and are sometimes, in γ, accompanied by a few hairs, when it becomes *Thlaspi hirtum* of Hudson, but not of Linnæus. I have always found the *seeds* solitary in each cell. For the *cotyledons* being incumbent, not accumbent as in *Thlaspi*, I rely on Mr. Brown.

4. *L. hirtum*. Hairy Mithridate Pepperwort.

Pouch often hairy, not scaly, bordered at the summit. *Style* prominent. *Stem-leaves* arrow-shaped, slightly toothed.

L. hirtum. *Comp. ed.* 4. 110. *DeCand. Syst.* v. 2. 536.

Thlaspi hirtum. *Linn. Sp. Pl.* 901. *Willd. v.* 3. 444. *Fl. Br.* 684. *Engl. Bot. v.* 26. *t.* 1803. *Hook. Scot.* 195.

T. Vaccariæ, incano folio perenne. *Raii Syn. ed.* 2. 175. *ed.* 3. 305.

T. villosum, capsulis hirsutis. *Bauh. Pin.* 106. *Prodr.* 47. *f. Morris. v.* 2. 297. *sect.* 3. *t.* 18. *f.* 27, copied from *Bauhin*.

T. villosum. *Matth. ed. Bauh.* 430. *f.*

T. capsulis hirsutis. *Bauh. Hist. v.* 2. 922. *f.* *Chabr. Sciagr.* 291. *f.* copied from *J. Bauhin*.

Hoary Cress. *Petiv. II. Brit. t.* 50. *f.* 10.

In fields on hilly ground.

In mountainous situations in Wales, and elsewhere. *Ray*. In Perthshire, near the seat of the Earl of Kinnoul. *Mr. Miller*, and *Mr. J. Mackay*. By the river Earn, Perthshire, and the Esk, between Brichen and Montrose, Angusshire. *Mr. G. Don*. At Browston, Suffolk. *Rev. G. R. Leathes*.

Perennial. *June*.

Root woody and perennial, as *Ray* indicates. *Stems* several, simple or branched, leafy, always finely hairy, as well as the *leaves*, which resemble those of the last, but the obovate radical ones are more numerous and permanent, on long slender *footstalks*. *Inflorescence* like the preceding, but the *petals* are larger. *Pouch* often hairy at the sides, but the dilated terminal cloven border seems to be always smooth, as are, very frequently, the sides also, being

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moreover entirely destitute of the minute concave scales, so characteristic of *L. campestre*. The *style* is full twice as long as the lobes of the border. *Seeds* solitary. *Cotyledons* incumbent, as I have found them on examination, and as there is no room to doubt their being in *L. campestre*, so that the more obvious character of the solitary *seeds* is thus confirmed, and the true genus of these plants perfectly established. Ray well knew this species, and the old figures, of which those of the two Bauhins only are original, answer perfectly to our plant, though Hudson's *Thlaspi hirtum* is but a variety of *campestre*.

322. HUTCHINSIA. Hutchinsia.

Br. in Ait. H. Kew. v. 4. 82. Comp. ed. 4. 107. DeCand. Syst. v. 2. 384.

Cal. equal at the base, with spreading, elliptical, concave, equal leaves, deciduous. *Pet.* obovate, undivided. *Filam.* simple. *Anth.* roundish. *Germ.* oval, compressed. *Style* various. *Stigma* obtuse. *Pouch* elliptic-oblong, transversely compressed, nearly entire, of 2 cells; valves keel-shaped, not bordered; partition narrow, crossing the greater diameter of the pouch. *Seeds* 2, or more, in each cell, pendulous, ovate; cotyledons accumbent.

Herbs various in habit, perennial, or annual. *Leaves* undivided, pinnatifid, or pinnate, smooth, a little succulent. *Fl.* white or reddish, never yellow.

1. *H. petræa*. Rock Hutchinsia.

Leaves pinnate, entire. Petals scarcely equal to the calyx. Stigma sessile. Seeds two in each cell.

II. petræa. Br. in Ait. H. Kew. v. 4. 82. Comp. ed. 4. 110. DeCand. Syst. v. 2. 389. Hook. Lond. t. 31.

Lepidium petræum. Linn. Sp. Pl. 899. Willd. v. 3. 434. Fl. Br. 681. Engl. Bot. v. 2. 111. Jacq. Austr. t. 131.

L. Linnæi. Crantz Austr. fasc. 1. 7. t. 2. f. 4, 5.

Nasturtium n. 515. Hall. Hist. v. 1. 222.

N. petræum annuum nostras. Pluk. Almag. 262. Phyt. t. 206. f. 4.

N. pumilum vernal. Bauh. Pin. 105. Moris. v. 2. 301. sect. 3. t. 19. f. 6.

Nasturtium montanum annuum tenuissimè divisum. Raii Syn. 304.

Cardamine pusilla saxatilis montana discoides. Column. Ecphr. v. 1. 274. t. 273.

Fine Cress. Petiv. H. Brit. t. 50. f. 4.

On limestone rocks, and walls, in the south of Britain.

On the rocks about Gorum's chair, near Bristol. *Richard Kayle, and*

TETRADYNAMIA—SILICULOSA. Teesdalia. 169

J. Sherard. On St. Vincent's rocks, Bristol. *Huds., and Dr. John Ford*, where it still grows. Also at Uphill, Somersetshire. *Huds.* On a limestone wall 2 miles from Pembroke. *Mr. Adams.* In various other parts of Wales, and of the mountainous limestone district of Yorkshire. *Dr. Hooker.*

Annual. *March, April.*

Root fibrous, annual rather than biennial. *Stems* one or more, 2 or 3 inches high, erect, leafy, branched, spreading, smooth, or finely downy. *Leaves* elegantly pinnate, of numerous pairs of elliptic-oblong, entire, smooth leaflets, with a terminal one of the same size, their common stalk channelled and bordered, so that the whole may be denominated a deeply pinnatifid leaf. *Fl.* white, very minute, corymbose. *Pet.* narrow. *Pouches* in longish clusters, spreading, oval, compressed, at first entire, tipped with the sessile *stigma*, but as they advance to maturity the point of each valve becomes slightly elongated or dilated, making a small notch to contain the somewhat elevated *stigma*. *Seeds* 2 in each cell, one above the other.

I beg leave to repeat that this plant has the pouch of a *Lepidium*, according to the original idea of that genus, being "emarginate and many-seeded"; but the *cotyledons* being accumbent, not incumbent, oblige us to take advantage of the *seeds* not being solitary, as in *Lepidium* better defined, to separate it, along with others whose *seeds* are still more numerous, as a distinct, though not very natural, genus. See Hooker and DeCandolle.

The name commemorates the late Miss Hutchins, a very distinguished botanist, whose discoveries in the neighbourhood of Belfast have often been celebrated, and whose premature death is deplored by all who knew her.

323. TEESDALIA. Teesdalia.

Br. in Ait. H. Kew. v. 4. 83. Comp. ed. 4. 108. Tr. of Linn. Soc. v. 11. 283. DeCand. Syst. v. 2. 391.

Cal. equal at the base, with spreading, ovate, concave, nearly equal, deciduous leaves. *Pet.* obovate, undivided, spreading, either equal, or unequal, the 2 outermost in the latter case much the largest. *Filam.* cylindrical, sometimes but 4, shorter than the corolla, incurved, each bearing an ovate, petal-like scale, at the inner side, just above the base. *Anth.* of 2 round, distinct, converging lobes. *Germ.* roundish, 2-lobed, rather compressed. *Stigma* globular, sessile. *Pouch* transversely compressed, roundish, concave on one side; bordered at the summit and cloven; of 2 cells, and 2 boat-like valves, with dilated keels; partition lanceolate, narrow, contrary to the greater diameter of the pouch. *Seeds* 2 in each cell,

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roundish, compressed; cotyledons, according to DeCandolle, accumbent, nearly orbicular.

Annual herbs, of humble growth, with numerous, pinnatifid, radical *leaves*, and several simple *stalks*, of which the central one only is quite leafless. *Fl.* small, white, in simple corymbose tufts, becoming long clusters of *pouches*.

1. *T. nudicaulis*. Naked-stalked, or Irregular, Teesdalia.

Petals unequal.

T. nudicaulis. *Br. in Ait. H. Kew. v. 4. 83. Comp. ed. 4. 110. Tr. of Linn. Soc. v. 11. 286. Hook. Scot. 194.*

T. Iberis. *DeCand. Syst. v. 2. 392.*

Iberis nudicaulis. *Linn. Sp. Pl. 907. Willd. v. 3. 458. Fl. Br. 692. Engl. Bot. v. 5. t. 327. Curt. Lond. fasc. 6. t. 42. Dicks. H. Sicc. fasc. 1. 10. Fl. Dan. t. 323.*

I. n. 521. Hall. Hist. v. 1. 224.

Nasturtium petræum. *Raii Syn. 303.*

Bursa pastoria minima. *Ger. Em. 276. f. Lob. Ic. 221. f.*

Shepherd's Cress. *Petiv. H. Brit. t. 50. f. 2.*

In dry barren gravelly fields.

About London, Norwich and Bury. *Ray, and Engl. Bot.* In Worcestershire and Cumberland. *Withering.* Near Sheffield. *Mr. J. Salt.* In cornfields near Easingwold, Yorkshire. *Rev. Archdeacon Peirson.* In several parts of the lowlands of Scotland. *Hooker.* Abundant in Anglesea. *Rev. H. Davies.*

Annual. *May.*

Root slender, tapering. *Leaves* numerous, spreading on the ground, partly undivided, but mostly pinnatifid in a lyrate manner, often downy at the edges, otherwise smooth. *Stems* several, slightly leafy, erect or spreading, the central one quite straight and always naked. *Fl.* in little white corymbs. Two outer *petals* thrice the size of the others. *Stam.* always 6, remarkable for their large white scales, first observed in this species by the late Mr. Sowerby.

Teesdalia is named after the late Mr. Robert Teesdale, F.L.S., formerly gardener to the Earl of Carlisle at Castle Howard, an excellent British botanist, who died at Turnham Green, Dec. 25, 1804. *T. regularis*, the only species known besides, is *Lepidium nudicaule* of Linnæus, exactly like our plant in habit, but distinguished by having equal *petals*, and often only 4 *stamens*.

324. THLASPI. Shepherd's Purse. Mithridate Mustard.

Linn. Gen. 334. Juss. 241. Fl. Br. 683. DeCand. Syst. v. 2. 373. Tourn. t. 101, F—L. Dill. Gen. t. 6. Lam. t. 557. Gærtn. t. 141.

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Bursa Pastoris. *Tourn. t.* 103.

Capsella. *DeCand. Syst. v.* 2. 383.

Cal. equal at the base, with ovate, concave, moderately spreading, deciduous leaves. *Pet.* obovate, equal, undivided, sometimes slightly notched; their claws short and broad. *Filam.* simple, slender. *Anth.* heart-shaped, acute. *Germ.* roundish, compressed, notched. *Style* short. *Stigma* obtuse. *Pouch* transversely compressed, roundish or inversely heart-shaped, crowned between its lobes with the style, of 2 cells; valves strongly keeled, mostly bordered; partition elliptic-lanceolate, crossing the greater diameter of the pouch. *Seeds* several in each cell, ovate; cotyledons accumbent.

Perennial or annual herbs, for the most part smooth, with undivided, rarely pinnatifid, leaves. *Fl.* white. *Pouches* variously shaped and bordered.

1. *T. arvense*. Mithridate Mustard, or Penny Cress.

Pouch orbicular, nearly flat, shorter than its stalk. Leaves smooth, oblong, toothed. Stem erect.

T. arvense. *Linn. Sp. Pl.* 901. *Willd. v.* 3. 442. *Fl. Br.* 683. *Engl. Bot. v.* 24. *t.* 1659. *Curt. Lond. fasc.* 6. *t.* 43. *Hook. Scot.* 193. *DeCand. Syst. v.* 2. 375. *Fl. Dan. t.* 793.

T. Dioscoridis. *Raii Syn.* 305. *Ger. Em.* 262. *f.*

T. secundum. *Matth. Valgr. v.* 1. 519. *f.* *Camer. Epit.* 337. *f.* *Dalech. Hist.* 662. *f.*

T. cum siliquis latis. *Bauh. Hist. v.* 2. 923. *f.*

Nasturtium n. 511. *Hall. Hist. v.* 1. 220.

Penny Cress. *Petiv. H. Brit. t.* 50. *f.* 9.

In cultivated or waste ground, but not common.

In Essex, Suffolk, and Staffordshire. *Ray.* Oxfordshire. *Bishop of Carlisle.* In waste ground on the north-east side of Norwich. *Mr. Rose.* Near the sea at the south end of Lowestoft, Suffolk.

Annual. *June, July.*

Root small and tapering. *Herb* deep shining green, quite smooth, erect, 8 to 12 inches high, branched, leafy. Radical leaves obovate, obtuse; those of the stem oblong, acute, arrow-shaped and clasping at the base; all toothed, or wavy. *Fl.* small, white, densely corymbose. *Pouches* very large, erect, in long clusters, orbicular, with a deep notch at the top, the broad borders of their valves rising high above the style. *Seeds* striated, black, acrid, with a strong garlic flavour, which occasioned them to be used formerly as an ingredient in the Mithridate Confection, an elaborate hodge-podge, now laid aside. The name of Penny Cress alludes to the form and size of the seed-vessels, resembling a silver penny.

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2. *T. perfoliatum*. Perfoliate Shepherd's Purse.

Pouch inversely heart-shaped. Stem-leaves heart-shaped, rather sharp at the base, clasping the branched stem. Style very short.

T. perfoliatum. Linn. *Sp. Pl.* 902. Willd. v. 3. 446. Fl. Br. 685. Engl. Bot. v. 33. t. 2354. Hook. Lond. t. 46. DeCand. *Syst.* v. 2. 378. Jacq. *Austr.* t. 337.

T. alpestre. Huds. 282. Dicks. *H. Sicc. fasc.* 6. 5.

T. arvense perfoliatum minus. Raii *Syn. ed.* 2. 176.

T. arvense perfoliatum majus. Bauh. *Pin.* 106. Moris. v. 2. 294. sect. 3. t. 17. f. 15; also *minus*. f. 16.

T. perfoliatum minus. Bauh. *Pin.* 106. Raii *Syn. ed.* 3. 305.

T. alterum mitius rotundifolium, Bursæ pastoris fructu. Column. *Ecphr.* v. 1. 278. t. 276. f. 2.

T. cordatum minus, flore albo, insipidum. Barrel. *Ic.* t. 815.

T. tertium pumilum. Clus. *Hist.* v. 2. 131. f.

T. minus Clusii. Ger. *Em.* 268. f.

T. rotundifolium. Ger. *Em.* 266. f. good.

Nasturtium n. 510. Hall. *Hist.* v. 1. 220.

Small Thorow Cress. Petiv. *H. Brit.* t. 50. f. 12.

In limestone pastures, rare.

Abundant among the stone-pits about Burford, Oxfordshire. Bobart and Sibth. I believe it has not been found in any other part of Britain. The north-country stations introduced into Ray's *Synopsis* by Dillenius, certainly belong to *T. alpestre*.

Annual. April, May.

Root fibrous. Herb glaucous, smooth. Stem branched from the very bottom, spreading, leafy. Leaves slightly toothed; radical ones stalked, ovate, obtuse; the rest sessile, arrow-shaped, clasping the stem, either rounded or acute at the base. Fl. densely corymbose, small, white. Cal. often purplish, with white membranous edges. Pouches on horizontal stalks, in not very long clusters, the keels of their valves much dilated and rounded at the upper part, rising high above the very short style. Seeds numerous in each cell, oval, yellowish.

Morison's f. 16, and *T. tertium pumilum* of Clusius, copied in Ger. Em. clearly belong to this, as they faithfully express the shortness of the style. I have starved specimens very nearly answering to those figures. The great Ray was aware that authors had here made two species out of one.

3. *T. alpestre*. Alpine Shepherd's Purse.

Stem-leaves arrow-shaped. Stems simple. Style prominent beyond the margin of the obovate abrupt pouch.

T. alpestre. Linn. *Sp. Pl.* 903. Willd. v. 3. 447. Fl. Br. 686. Engl. Bot. v. 2. t. 81. DeCand. *Syst.* v. 2. 380.

TETRADYNAMIA—SILICULOSA. Thlaspi. 173

T. montanum. Huds. 282. With. 674. Curt. Cat. in Fl. Lond. v.1. n. 85.

T. foliis Globulariæ. Bauh. Hist. v. 2. 926. f. Raii Syn. ed. 2. 175. ed. 3. 305.

T. montanum secundum. Clus. Hist. v. 2. 131. f.

T. albi supini varietas. Ger. Em. 268. f. 2.

Lepidium n. 519. Hall. Hist. v.1. 223.

Woad Cress. Petiv. H. Brit. t. 50. f. 11.

In mountainous pastures in the north of England, among limestone rocks and lead mines.

About Settle and Malham, Yorkshire. Ray. At Matlock bath, Derbyshire.

Perennial. June, July.

Root much branched at the crown, running deep into the ground, but not creeping. Herb smooth and glaucous. Stems several, a span high, leafy, all simple, unless eaten down early by cattle, in which case they branch from the base, any small lateral shoot, as in *Engl. Bot.*, being extremely rare. Leaves scarcely, if at all, toothed; the radical ones in dense tufts, stalked, ovate or obovate, obtuse, a little wavy; those of the stem numerous, sessile, arrow-shaped, mostly acute at each end. Fl. white, small, but the petals vary in size, and are slightly notched. Anth. purplish, as is likewise the calyx. Pouch obovate and obtuse, seldom so much heart-shaped as in *Engl. Bot.*, nor do its bordered lobes ever reach half the length of the slender prominent style. Seeds tawny, 3 or 4 in each cell.

The attentive reader will find my synonyms of this and the last, as well as of *Lepidium campestre* and *hirtum*, a little at variance with those of the learned and accurate Prof. DeCandolle; and in deference to such authority I have revised them; but this examination has confirmed their original application. The description and figure in *Engl. Bot.* will not, I think, be found to disagree with each other; see Hooker under *T. perfoliatum*.

4. *T. Bursa pastoris.* Common Shepherd's Purse.

Hairy. Pouch inversely heart-shaped, somewhat triangular. Radical leaves pinnatifid.

T. Bursa pastoris. Linn. Sp. Pl. 903. Willd. v. 3. 447. Fl. Br. 687. *Engl. Bot.* v. 21. t. 1485. Curt. Lond. fasc. 1. t. 50. Hook. Scot. 194. Bull. Fr. t. 223. Fl. Dan. t. 729.

Θλασπι, (Thlaspi). Diosc. Ic. 77.

Nasturtium n. 514. Hall. Hist. v.1. 221.

Capsella Bursa pastoris. DeCand. Syst. v. 2. 383.

Bursa pastoris. Dorsten. Botan. 54. 2. f. Matth. Valgr. v.1. 521. f. Camer. Epit. 340. f. Raii Syn. 306. Ger. Em. 276. f.

Pastoria Bursa. Fuchs. Hist. 611. f.

Shepherd's Purse. Petiv. H. Brit. t. 49. f. 4—7.

174 TETRADYNAMIA—SILICULOSA. Cochlearia.

In waste, as well as cultivated ground, and by way sides, every where.

Annual. *March—November.*

Root tapering, whitish, with a peculiar smoke-like scent. *Herb* very variable in luxuriance, rough with prominent hairs. *Stem* branched, leafy, erect or spreading, from 6 to 12 inches high. *Radical leaves* several, more or less deeply pinnatifid, toothed or notched, their terminal lobe usually triangular and acute; *stem-leaves* oblong, acute, toothed, clasping the stem with their arrow-shaped base. *Fl.* small, corymbose, often tinged with purplish brown. *Pet.* entire. *Pouches* smooth, on long spreading stalks, forming a long cluster, each nearly triangular, a little tumid, abrupt with a broad shallow sinus at the extremity, in which the very short style is situated, but the lobes are scarcely, if at all, dilated or winged, though in some measure compressed at the margin; partition narrow. *Seeds* about 5, or more, in each cell.

Prof. DeCandolle remarks that this herb is much less acrid than the rest of its order, and rather glutinous to the taste. Small birds eat the seeds and flowers. The want of a dilated border to the pouch has induced that eminent botanist, and a few others, to separate the present species from *Thlaspi*. But surely the difference, which I have long ago noted, is very slight and dubious. I rather concur with Mr. Brown in not making it of generic importance; and at any rate the name of *Thlaspi* belongs irrefragably to this identical plant, having been given by Dioscorides, Pliny, and every succeeding writer, though Cæsalpinus, book 8, chapter 74 and 76, (not book 2,) mentions *Capsella* as one of the synonyms in Dioscorides, of which I find no traces. The word indeed is bad Latin, synonymous with *capsula*.

The Common Shepherd's Purse occurs in almost every part of the globe. To the various and distant countries mentioned by DeCandolle, I can add Nepaul, from whence Dr. Wallich has sent specimens. Their *pouches* however are much broader and shorter than those from the Isle de Bourbon, but there are, in both instances, 8 or 10 *seeds* in each cell.

325. COCHLEARIA. Scurvy-grass.

Linn. Gen. 334. *Juss.* 240. *Fl. Br.* 687. *DeCand. Syst.* v. 2. 358. *Tourn. t.* 101. *Lam. t.* 558.

Cal. equal at the base, with ovate, concave, spreading, deciduous leaves. *Pet.* obovate, undivided, spreading, twice the length of the calyx, with short claws. *Filam.* awl-shaped, simple, incurved, the length of the calyx. *Anth.* roundish. *Germ.* roundish. *Style* very short, permanent. *Stigma* obtuse. *Pouch* globose, ovate, or ellip-

tical, turgid, rugged, veiny, tipped with the style, of 2 cells; valves concave, rather thick, not bordered, scarcely keeled; partition orbicular or elliptical, membranous, generally as wide as the valves. *Seeds* several in each cell, roundish; cotyledons flat, accumbent.

Annual or perennial herbs, celebrated as antiscorbutic, mostly smooth, and rather succulent, with branched spreading *stems*; and simple *leaves*, the radicle ones stalked and most entire. *Fl.* white, or pale purplish, never yellow.

1. *C. officinalis*. Common Scurvy-grass.

Radical leaves roundish; those on the stem oblong and somewhat sinuated. Pouch globose.

C. officinalis. Linn. *Sp. Pl.* 903. Willd. *v.* 3. 448. *Fl. Br.* 688. *Engl. Bot. v.* 8. *t.* 551. *Woodv. t.* 29. *Hook. Scot.* 195. *Lond. t.* 148. *DeCand. Syst. v.* 2. 364. *Fl. Dan. t.* 135.

Cochlearia. Raii *Syn.* 302. *Bauh. Hist. v.* 2. 942. *f. Camer. Epit.* 271. *f. Dod. Pempt.* 594. *f.*

C. rotundifolia. Ger. *Em.* 401. *f.*

Garden Scurvy-grass. *Petiv. H. Brit. t.* 49. *f.* 1.

Nasturtium n. 503. *Hall. Hist. v.* 1. 218.

β. *Cochlearia minor rotundifolia nostras*. Raii *Syn.* 303.

γ. *C. grœnlandica*. *With.* 573; but not of *Linnaeus*.

C. rotundifolia. *Dill. in Raii Syn.* 302.

On the sea coast, in stony or muddy situations, abundantly; sometimes, especially the varieties, in watery spots on the Welsh or Scottish mountains.

Annual. *May*.

A smooth, sleek and shining herb, varying much in luxuriance, and somewhat in the shape of its foliage. *Stem* angular, much branched, usually a foot high; in mountain specimens only 2 or 3 inches. *Lower leaves* on long stalks, roundish-heart-shaped, wavy; *upper* sessile, smaller and more oblong, sinuated, or deeply toothed, clasping the stem. *Fl.* pure white, in numerous corymbose tufts. *Pouches* nearly globular, obscurely veiny, tipped with the short *style*; partition broadly ovate.

β, sent by the late Rev. H. Davies from Beaumaris, has long stalks to many of the *stem-leaves*, which are also more heart-shaped than in the common kind. The *flowers* are small and white. *Pouches* but slightly veiny.

2. *C. grœnlandica*. Greenland Scurvy-grass.

Leaves kidney-shaped, fleshy, entire; uppermost oblong. Pouch globose.

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C. grœnlandica. Linn. *Sp. Pl.* 901. Willd. v. 3. 449. Comp. ed. 4. 110. Engl. Bot. v. 34. t. 2403. Tr. of Linn. Soc. v. 10. 344. DeCand. *Syst.* v. 2. 366.

C. minima, erecta et repens, insulæ Aalholmianæ. Willius in Bartholin's *Act. Hafniæ*, v. 3. 143. f. 144.

On the Highland mountains of Scotland.

On the mountains of Clova, Angusshire, and at Loch-ne-gare. Mr. G. Don.

Annual. August.

Root with numerous fibres. *Herb* much smaller than any variety of the last that I have seen. *Radical leaves* on long stalks, very fleshy, convex at the back, roundish-kidney-shaped, quite entire; those of the *stems* few, more oblong, partly stalked, either ovate, with a tooth at each side, or ovate-oblong, entire, seldom quite sessile. *Fl.* numerous, one cluster sessile at the root, the rest terminating the very short *stems*. *Cal.* purplish. *Pet.* thrice the size of the foregoing, white, tinged with purple. I have seen but a half-ripe *pouch*, which resembles *C. officinalis*.

Linnæus and DeCandolle have made this a distinct species. I do not venture to assert that it is so, but the late accurate Mr. Don was of that opinion, and rightly determined it to be the Linnæan plant. The great size and beauty of the *flowers* are remarkable. Dr. Richardson and Dillenius found our supposed variety γ of *C. officinalis*, which some have taken for the *grœnlandica*, to remain unaltered from seed in their gardens; and this report has induced me to suspect their plant to have been really the *grœnlandica*, though they would hardly have omitted to notice the large flowers. Culture, under accurate observation, may settle the whole difficulty; for opinion here is not sufficient.

3. *C. anglica.* English Scurvy-grass.

Radical leaves ovate, entire; those on the stem sessile, lanceolate and toothed. *Pouch* elliptical, strongly reticulated with veins.

C. anglica. Linn. *Sp. Pl.* 903. Willd. v. 3. 449. Fl. Br. 688. Engl. Bot. v. 8. t. 552. Hook. Scot. 195. DeCand. *Syst.* v. 2. 364. Fl. Dan. t. 329.

C. folio sinuato. Bauh. Pin. 110. Raii Syn. 303.

C. britannica. Dod. Pempt. 594. f. Ger. Em. 401. f. Dalech. Hist. 1320. f. Lob. Obs. 157. f.

C. britannica seu anglica. Lob. Ic. 294. f.

Sea Scurvy-grass. Petiv. H. Brit. t. 49. f. 2.

On the muddy sea shore, and about the mouths of large rivers, in many places.

Annual. May.

Root tapering. *Herb* variable in stature, and in the number, as well as division, of its usually numerous *stems*, which are partly

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prostrate ; but its general size is scarcely half that of the Common Scurvy-grass. The *stem-leaves* are narrower, often almost entire ; *radical* ones much smaller in proportion to the rest, ovate, entire, rarely wavy, or slightly toothed. *Fl.* white or faintly tinged with purple, often very little different from the first species, though frequently larger. The *pouches* afford a striking and essential distinction, being twice as large, elliptical, not globose, strongly marked with abundance of prominent reticulated veins, and tipped with a much more elongated *style*. *Seeds* large, oval, 4 or 5 in each cell.

4. *C. danica*. Danish Scurvy-grass.

Leaves all triangular and stalked. Pouch elliptical, reticulated with veins.

C. danica. Linn. *Sp. Pl.* 903. Willd. *v.* 3. 449. *Fl. Br.* 689. *Engl. Bot.* *v.* 10. *t.* 696. Hook. *Scot.* 196. DeCand. *Syst.* *v.* 2. 366. *Fl. Dan.* *t.* 100.

C. marina, folio anguloso parvo. Raii *Syn.* 303.

C. Aremorica. Barrel. *Ic. t.* 1305. *f.* 1.

Thlaspi hederaceum. Lob. *Ic.* 615. *f.* Ger. *Em.* 271. *f.* Bauh. *Hist.* *v.* 2. 933. *f.* Dalech. *Hist.* 1420. *f.*

Ivy Scurvy-grass. Petiv. *H. Brit. t.* 49. *f.* 3.

On the sea coast, in a muddy soil, but rare.

In Walney island, Lancashire ; Mr. Lawson. Ray. Anglesea. Mr. Lhwyd and the Rev. H. Davies. At Wells, Norfolk. Mr. Crowe. On several parts of the south coast, from Portland island to the Land's end. Mr. D. Turner and Mr. Sowerby.

Annual. May, June.

Smaller than the last. *Stems* several, 3 or 4 inches long, spreading, or prostrate, seldom divided, leafy throughout. *Leaves* all on longer or shorter footstalks, uniform, three-lobed, entire ; heart-shaped at the base ; resembling Ivy, or *Anemone Hepatica*, in miniature. *Fl.* small, pure white. *Pouches* in rather lax, but shortish, clusters, elliptical, most like those of *C. anglica*, though smaller, and less strongly veined, with a shorter *style*. *Seeds* 6 in each cell.

Certainly quite distinct from the last, and unchanged by cultivation, except becoming somewhat branched from luxuriance, but the foliage never alters. I have not seen DeCandolle's variety β , found by Dr. Hooker on the Giant's Causeway, whose radical *leaves* are described as kidney-shaped, those on the stem very few, and all undivided. By the description it should seem rather to belong to *C. anglica*, in a starved state.

5. *C. Armoracia*. Horse-radish.

Radical leaves oblong, crenate ; those of the stem lanceolate, either cut or entire.

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C. Armoracia. *Linn. Sp. Pl.* 904. *Willd. v. 3.* 451. *Fl. Br.* 690.
Engl. Bot. v. 33. t. 2323. *Woodv. t. 150.* *Hook. Scot.* 196.
DeCand. Syst. v. 2. 360.

Nasturtium n. 504. *Hall. Hist. v. 1.* 218.

Raphanus rusticanus. *Raii Syn.* 301. *Ger. Em.* 241. *f. Matth. Valgr. v. 1.* 401. *f. Camer. Epit.* 225. *f. Moris. v. 2.* 237. *sect. 3. t. 7. f. 2.*

R. sylvestris. *Fuchs. Hist.* 660. *f. Ic.* 379. *f.*

Broad Horse-radish. *Petiv. H. Brit. t. 49. f. 11.*

β. Jagged Horse-radish. *Ibid. f. 12.*

In watery mountainous places.

About Alnwick, and elsewhere in Northumberland. *Ray*. In several parts of Craven, Yorkshire. *Dr. Lister*. Common in waste ground, about orchards and farm yards, from the refuse of gardens.

Perennial. *May*.

The long, cylindrical, white, highly pungent *roots*, well known for their use, on many occasions, at table, run deep into the ground, and are extremely difficult of extirpation. The *stems* are 2 feet high, erect, branched, spreading, bearing scattered, sessile, lanceolate *leaves*, which are serrated, jagged, or deeply and narrowly pinnatifid. *Radical leaves* very large, on long stalks, upright, oblong, obtuse, crenate, veiny, occasionally pinnatifid, a foot or more in length. *Fl.* numerous, white, in numerous corymbs, which soon become clusters of long-stalked, roundish-elliptical, compressed, notched *pouches*, most of which prove abortive. The *partition* is very narrow. *Style* short. *Stigma* large, capitate. All the *herbage* is smooth, of a dark green.

326. SENEBIERA. Wart-cress.

DeCand. Syst. v. 2. 521. *Comp. ed. 4.* 108.

Coronopus. *Gærtn. t. 142.* *Fl. Br.* 690. *Br. in Ait. H. Kew. v. 4.* 76. *Lam. t. 558.*

Cal. equal at the base, with ovate, concave, spreading, deciduous leaves. *Pet.* obovate, or ovate, undivided, sometimes wanting. *Filam.* awl-shaped, simple, about the length of the calyx, 2 or 4 of them occasionally deficient. *Anth.* roundish, 2-lobed. *Germ.* roundish, or 2-lobed, compressed. *Style* very short. *Stigma* obtuse. *Pouch* roundish, transversely compressed, more or less distinctly 2-lobed, 2-celled, not bursting, tipped with the style; valves globose, or rounded and somewhat crested, rugged, each lodging a solitary, pendulous, roundish *seed*; cotyledons incumbent, oblong, folded or channelled.

Annual or biennial, nearly smooth, diffuse or prostrate *herbs*. *Leaves* either undivided, or variously and deeply

pinnatifid and cut. *Fl.* small, white, in clusters opposite to the leaves.

There has been much controversy respecting the *Coronopus* of antient authors, some taking it for *Cochlearia Coronopus* of Linnæus, others for his *Plantago Coronopus*, others for *Myosurus*, or for *Achillea Ptarmica*, while that of Pliny seems by his description very different from all these, as well as from what Dioscorides intended. Dr. Sibthorp, the professed object of whose journey was to determine the old Greek names, fixed upon *Lotus ornithopodioides* as the true *κορωνοπους*; though in his journal, printed by the Rev. R. Walpole, *Travels in the East*, 102, he speaks of *Cochlearia Coronopus* as the plant of Dioscorides, still called *κορωνοπόδι* in the isle of Fannic, and eaten as a pot herb. It seems to me that the name in question was applied by the antients to various plants, whose roots were crowned with radiating depressed leaves. In this obscurity, where nothing can really be ascertained, though I had originally followed Gærtner, I now cannot but agree with my friend DeCandolle, in preferring the name by which he has commemorated a most eminent physiological botanist, the Rev. M. Senebier of Geneva. Of his merits there can be no doubt, nor can the characters of this genus, as distinct from every other of its tribe, ever come in question.

1. *S. Coronopus*. Common Wart-cress. Swine's-cress.

Pouch undivided, crested with little sharp points. Style prominent. Leaves pinnatifid, subdivided.

S. Coronopus. DeCand. *Syst.* v. 2. 525. *Comp. ed.* 4. 111.

Coronopus Ruellii. Gærtner. v. 2. 293. t. 142. f. 5. *Fl. Br.* 690.

Engl. Bot. v. 24. t. 1660. *Hook. Scot.* 193. *Ger. Em.* 427. f.

Dalech. Hist. 670. f. *Bauh. Hist.* v. 2. 919. f.

C. repens Ruellii. Lob. *Ik.* 438. f.

C. n. 502. *Hall. Hist.* v. 1. 217.

Cochlearia Coronopus. Linn. *Sp. Pl.* 904. *Willd.* v. 3. 450. *Mart.*

Rust. t. 92. *Fl. Dan.* t. 202.

Nasturtium supinum, capsulis verrucosis. *Raii Syn.* 304.

Ambrosia. *Matth. Valgr.* v. 2. 204. f.

A. campestris repens. *Bauh. Pin.* 138.

Pseudambrosia. *Camer. Epit.* 596. f. good.

Wart- or Swine's-cress. *Petiv. H. Brit.* t. 50. f. 6.

Common in waste ground, and by way sides.

Annual. *June—September.*

Root tapering. Stems spreading quite flat on the ground, branched,

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leafy, smooth like every other part. *Leaves* somewhat glaucous, deeply pinnatifid; their fore sides mostly subdivided in a similar manner. *Fl.* opposite to the leaves, white, small, densely corymbose. *Pouches* in dense clusters, much shorter than the leaves, kidney-shaped, elegantly notched and furrowed, but with no terminal cleft. *Style* prominent, though short, thick and pyramidal. Each *cell* is thick and leathery, never splitting into valves, and contains one ovate *seed*, whose *cotyledons* are rather oblong and channelled than linear.

The whole plant is nauseously acrid and fetid, and must require much boiling to render it eatable.

2. *S. didyma*. Lesser Wart-cress.

Pouch cloven, of two round wrinkled lobes. Style scarcely discernible. Leaves pinnatifid, partly notched.

S. didyma. *Comp. ed.* 4. 111. *Savi Etrusc. v.* 2. 183. *Willd. Enum.* 668.

S. pinnatifida. *DeCand. Syst. v.* 2. 523.

Coronopus didyma. *Fl. Br.* 691. *Br. in Ait. H. Kew. v.* 4. 76.

Lepidium didymum. *Linn. Mant.* 92. *Dicks. Dr. Pl.* 11. *With.* 567. *Engl. Bot. v.* 4. t. 248.

L. anglicum. *Huds.* 280.

In waste ground, near the sea, at the south-west extremity of Britain.

About Exeter. *Mr. Newbery*. At Truro and Penryn, Cornwall.

Huds. At Dale, near Milford Haven. *Mr. Adams*,

Annual. *July*.

Root fibrous, small. *Stems* procumbent, a foot or more in length, branched, leafy, finely hairy. *Leaves* smooth, flat, deeply pinnatifid, their lobes cut in a similar manner, especially at the fore side. *Clusters* generally opposite to the leaves, and often exceeding them in length, slender, of numerous, small, white *flowers*, having only 2 or 4 *stamens*, scarcely ever more. *Pouch* of 2 very distinct, round, turgid, wrinkled lobes, with the *stigmas* almost sessile, in the deep cleft between them.

The original specific name, given by Linnæus, and so very appropriate, appears preferable to *pinnatifida*, which does not distinguish the present species from the foregoing.

327. *IBERIS*. Candy-tuft.

Linn. Gen. 335. *Juss.* 240. *Fl. Br.* 692. *DeCand. Syst. v.* 2. 393. *Lam. t.* 557. *Gærtn. t.* 141.

Cal. equal at the base, with ovate, concave, equal, spreading, deciduous leaves. *Pet.* obovate, undivided, spreading, with short claws, unequal; the 2 outermost largest, equal to each other. *Filam.* about the length of the calyx,

awl-shaped, distinct, simple. *Anth.* roundish. *Germ.* almost orbicular, notched at the summit, compressed. *Style* very short. *Stigma* obtuse. *Pouch* ovate, transversely compressed, bordered, of 2 cells, cloven at the top into 2 acute lobes, between which stands the permanent, somewhat elongated, *style*; valves 2, distinct, boat-shaped, each with a dilated pointed keel; partition elliptical, membranous, as wide as the valves. *Seeds* solitary in each cell, pendulous, ovate; cotyledons ovate, flat, accumbent.

Herbaceous, or in some degree shrubby. *Leaves* rather fleshy, undivided or pinnatifid, entire or toothed. *Fl.* white, or purplish, never yellow; the outer ones in each corymbose head or cluster most irregular, somewhat radiant. *Pouches* erect, or inflexed, racemose. DeCandolle has 25 species.

1. *I. amara*. Bitter Candy-tuft.

Stem herbaceous. Leaves lanceolate, acute, partly notched. Flowers in oblong clusters.

I. amara. Linn. *Sp. Pl.* 906. Willd. *v.* 3. 456. *Fl. Br.* 692. *Engl. Bot.* *v.* 1. *t.* 52. DeCand. *Syst.* *v.* 2. 398.

I. n. 520. Hall. *Hist.* *v.* 1. 223.

Thlaspi amarum. Ger. *Em.* 263. *f.*; bad.

T. umbellatum arvense amarum. Bauh. *Hist.* *v.* 2. 925. *f.*

T. umbellatum arvense, iberidis folio. Moris. *v.* 2. 295. *sect.* 3. *t.* 17. *f.* 18; copied from Gerarde.

Thlaspidium foliis nasturtii. Riv. *Tetrap. Irr.* *t.* 112.

In chalky fields, but rare.

About Henley and other places in Oxfordshire. Huds. About Wallingford, Berkshire, plentifully, and undoubtedly wild.

Annual. *July*.

Whole plant smooth, of a nauseous bitter flavour. *Root* small, tapering. *Stems* diffuse, branched, leafy. *Leaves* lanceolate and entire, or dilated and wedge-shaped, with several tooth-like notches. *Corymbs* soon lengthened out into clusters of handsome brilliant-white flowers, which have procured it a place, among hardy annuals, in some gardens.

328. ISATIS. Woad.

Linn. *Gen.* 344. Juss. 242. *Fl. Br.* 693. DeCand. *Syst.* *v.* 2. 564. Tourn. *t.* 100. Lam. *t.* 554. Gærtn. *t.* 142.

Cal. equal at the base, coloured; leaves ovate, concave, spreading, deciduous. *Pet.* obovate, entire, equal, tapering at the base into short claws. *Filam.* thread-shaped, spreading, simple, as long as the calyx. *Anth.* roundish.

Germ. roundish, compressed. *Style* none. *Stigma* capitate, sessile. *Pouch* oblong, obtuse, compressed, of 1 cell and 2 valves, their keels flat and bordered. *Seed* solitary, ovate-oblong, pendulous at the top of the cell; cotyledons flattish, incumbent.

Annual or biennial, tall, upright, rather glaucous *herbs*, with a branched corymbose *stem*. Lower *leaves* stalked; upper sessile, clasping and arrow-shaped; all generally, but not always, very smooth. *Clusters* many-flowered, compound; sometimes accompanied, on their main stalks, with diminished leaves, but destitute of true *bracteas*. *Fl.* yellow.

DeCandolle enumerates 17 species, all yielding, by maceration, more or less of a blue sediment, similar to indigo, and like that substance useful for dyeing.

1. *I. tinctoria*. Dyer's Woad.

Radical leaves copiously crenate; those of the stem entire.

Pouch abrupt, smooth, thrice as long as broad.

I. tinctoria. *Linn. Sp. Pl.* 936. *Willd. v. 3.* 420. *Fl. Br.* 693. *Engl. Bot. v. 2. t. 97.* *Mart. Rust. t. 41.* *DeCand. Syst. v. 2.* 569.

I. n. 523. *Hall. Hist. v. 1.* 224.

I. sylvestris. *Fuchs. Hist.* 332. *f. Matth. Valgr. v. 1.* 582. *f. Camer. Epit.* 410. *f. Dalech. Hist.* 499. *f. Schreb. Waidt, 9. t. 1—3.*

Glastum sativum. *Raii Syn.* 307.

G. sylvestre. *Ger. Em.* 491. *f.*

In cultivated fields, and about their borders, but rare.

At New Barnes near Ely. *Relhan*. Near Durham. *Mr. E. Robson*.

Biennial. *July*.

Root tapering. *Stem* about 2 feet high, wand-like, slightly glaucous, leafy, paniced at the top. Radical *leaves* numerous, obovate, crenate and wavy, smooth, except an occasional marginal fringe; the rest sessile, arrow-shaped, entire, smooth, clasping the stem. *Panicle* of many compound racemose branches, beset with diminished lanceolate leaves, like *bracteas*, all of a yellow hue as well as the *stalks*. *Fl.* numerous, small, bright yellow. *Pouches* on capillary stalks, pendulous, wedge-shaped, obtuse, tipped with the *stigma*, quite smooth, blackish, a little shining, finally bursting in the middle, where the *seed* is lodged.

As the ancient Britons are reported to have painted their bodies with the blue colour obtained from this plant, and still used in dyeing, the Woad is most probably an original production of our island; though what occurs now and then, about cultivated fields, is supposed to have escaped from the crops occasionally raised, chiefly in the middle part of England. The naturalized plants are less perfectly smooth, and far less luxuriant, than the cultivated ones.

329. CAKILE. Sea Rocket.

Tourn. t. 483. *Gærtn. t.* 141. *Br. in Ait. H. Kew. v.* 4. 71. *DeCand. Syst. v.* 2. 427. *Lam. t.* 554.

Cal. nearly close and erect; leaves obovate-oblong, deciduous, two opposite ones protuberant at the base. *Pet.* obovate, obtuse, spreading; claws as long as the border, equal to the calyx. *Filam.* awl-shaped, simple. *Anth.* oblong, cloven at the base. *Germ.* oblong. *Style* none. *Stigma* obtuse, sessile. *Pouch* of 2 joints, angular, compressed; the lower somewhat turbinate, abrupt, often abortive; upper oblong, with a tapering point, tipped with the stigma, deciduous; each of 1 cell, not bursting. *Seeds* solitary in each cell, elliptical; in the lower one, if present, pendulous; in the upper, erect; cotyledons linear, accumbent.

Smooth, juicy, branching, annual herbs, natives of the sandy sea coast in Europe and America. *Leaves* pinnatifid or toothed. *Fl.* corymbose, purplish, white, or yellow, for I cannot but concur with Mr. Brown in uniting the *Rapistrum* of DeCandolle with this genus.

1. *C. maritima*. Purple Sea Rocket.

Joints of the pouch two-edged; the upper one arrow-shaped. Leaves fleshy, pinnatifid, obtuse.

C. maritima. *Willd. v.* 3. 416. *Br. in Ait. H. Kew. v.* 4. 71. *DeCand. Syst. v.* 2. 428. *Comp. ed.* 4. 111. *Scop. Carn. ed.* 2. v. 2. 35. *Hook. Lond. t.* 160.

C. Serapionis. *Gærtn. v.* 2. 287. *t.* 141. *f.* 12. *Lob. Ic.* 223. *f.* *Dalech. Hist.* 1395. *f.*

C. quibusdam, aliis Eruca marina, et Raphanus marinus. *Bauh. Hist. v.* 2. 867. *f.* 868. *Raii Syn.* 307.

Bunias Cakile. *Linn. Sp. Pl.* 936. *Fl. Br.* 694. *Engl. Bot. v.* 4. *t.* 231. *Dicks. Dr. Pl.* 77. *Fl. Dan. t.* 1168.

Eruca marina. *Ger. Em.* 248. *f.*

E. maritima anglica, siliquâ fungosâ torosâ rotundâ, foliis crassissimis latioribus. *Moris. v.* 2. 231. *sect.* 3. *t.* 7. *f.* 20.

Sea Rocket. *Pet. H. Brit. t.* 46. *f.* 6.

On the sandy sea coast frequent.

Annual. *June—September.*

Root small. *Herb* smooth, fleshy, bushy, a foot high, or more, much branched, and spreading in every direction, the *stem* and branches remarkably twisted and zigzag, never straight. *Leaves* scattered, thick, fleshy, with a saltish bitter taste, a little glaucous, variously pinnatifid, scarcely stalked; each of their seg-

ments obtuse, with a minute glandular point. *Fl.* rather large and handsome, of a bright lilac-colour, densely corymbose. *Pouches* an inch long, in *clusters*, their lower joint generally abortive; they are erect, with 4 sharp edges, but so compressed as to be sword-shaped at the upper part, and when ripe the upper joint falls off, without bursting. The contrary direction of their *seeds*, when both perfect, affords a striking generic character.

330. CRAMBE. Kale.

Linn. Gen. 344. *Juss.* 242. *Fl. Br.* 695. *DeCand. Syst.* v. 2. 650. *Tourn. t.* 100. *Lam. t.* 553. *Gærtn. t.* 142.

Cal. spreading, nearly equal at the base; leaves elliptic-oblong, concave, deciduous. *Pet.* equal, each with a spreading, rounded, obtuse border, rather longer than its claw. *Filam.* awl-shaped, 4 longest generally each with a sharp lateral tooth. *Anth.* elliptic-oblong, erect. *Germ.* ovate-oblong. *Style* scarcely any. *Stigma* obtuse. *Pouch* succulent, finally leathery, of 2 joints, each of 1 cell, not bursting; the lowermost abortive, assuming the form of a stalk; the upper globular, deciduous. *Seed* solitary, globose, pendulous from the extremity of a long, curved, capillary stalk, springing from the bottom of the cell; cotyledons roundish, convex, fleshy, folded, accumbent; not, as in DeCandolle's general table, *incumbent*.

Herbaceous, or somewhat shrubby. *Leaves* rather succulent, toothed, or pinnatifid, in some lyrate, either smooth or hairy. *Fl.* white, in clustered panicles.

1. *C. maritima*. Sea Kale.

Longer filaments toothed. Leaves roundish, sinuated, wavy, toothed, glaucous, very smooth as well as the stem.

C. maritima. *Linn. Sp. Pl.* 937. *Willd.* v. 3. 418. *Fl. Br.* 695. *Engl. Bot.* v. 13. t. 924. *Hook. Scot.* 193. *DeCand. Syst.* v. 2. 651. *Fl. Dan.* t. 316.

C. maritima, *Brassicæ folio.* *Raii Syn.* 307.

Brassica marina anglica. *Ger. Em.* 315. f.

B. monospermos anglica. *Bauh. Hist.* v. 2. 830.

Sea Cole. *Turn. Herb. part* 1. 89.

Sea Grape Colewort. *Petiv. H. Brit.* t. 48. f. 12.

On the sandy sea coast.

Perennial. *May, June.*

Root large and fleshy, much divided at the crown. *Herb* very glaucous, smooth, rather succulent. *Stems* several, from 1 to

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2 feet high, branched, spreading, leafy. *Leaves* stalked, spreading or deflexed, large, undulated and toothed, of a leathery texture; the lowermost somewhat lyrate; the rest roundish, acute. *Clusters* terminal, collected into dense panicles. *Fl.* large, white. *Pouches* smooth, the size of Black Currants.

This is now become a frequent culinary herb. Its young shoots, which are very hardy, are earlier than Asparagus, and nearly as good. They are best raised under tall earthen pots perforated at the top, but succeed tolerably if covered up with clean sand.



TETRADYNAMIA SILIKUOSA.

331. DENTARIA. Coralwort.

Linn. Gen. 337. *Juss.* 239. *Fl. Br.* 696. *DeCand. Syst.* v.2. 271. *Tourn. t.* 110. *Lam. t.* 562.

Cal. equal at the base, erect; leaves ovate-oblong, converging lengthwise, obtuse, deciduous. *Pet.* obovate, obtuse, horizontal, with erect claws shorter than the calyx. *Filam.* awl-shaped, simple, distinct. *Anth.* arrow-shaped, erect. *Germ.* oblong. *Style* short and thick. *Stigma* obtuse, scarcely notched. *Pod* sessile, lanceolate, compressed laterally, tapering upwards; valves flat, without ribs, narrower than the partition, bursting elastically from the base, and mostly revolute. *Seeds* ovate, not bordered, inserted alternately in a single row; their stalks dilated and winged; cotyledons accumbent, rather thick.

Smooth, upright, unbranched *herbs*, with fleshy, horizontal, scaly or toothed *roots*. *Leaves* mostly alternate, palmate or pinnate. *Fl.* large and handsome, purplish, or whitish.

We are much obliged to Prof. DeCandolle, for finding a character in the lanceolate *pod*, and dilated *stalks* of the *seeds*, by which this genus may be kept separate from *Cardamine*, the habit, magnitude, beauty, and peculiar kind of *root*, marking it so distinctly. Some of the species are among the finest alpine plants, at least of this natural order.

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1. *D. bulbifera*. Bulbiferous Coralwort.

Lower leaves pinnated; upper simple, with axillary bulbs.

Dentaria bulbifera. Linn. *Sp. Pl.* 912. Willd. v. 3. 479. *Fl. Br.* 696. *Engl. Bot.* v. 5. t. 309. *Blacks. Harefield*, 23. *Forst. Tonbr.* 77. *DeCand. Syst.* v. 2. 278. *Fl. Dan.* t. 361. *Ger. Em.* 984. f. *Lob. Ic.* 687. f.

D. n. 470. *Hall. Hist.* v. 1. 204.

D. quarta baccifera. *Clus. Hist.* v. 2. 121. f.

D. seu Coralloides Cordi. *Gesn. Ic. Pict. fasc.* 1. 3. t. 2. f. 3.

Cardamine bulbifera. *Br. in Ait. H. Kew.* v. 4. 101. *Hook. Scot.* 198.

Coralloidis alia species. *Cord. Hist.* 151, 2. f.

In moist umbrageous places, rare.

Near Mayfield, Sussex. *Parkinson*. In the Old Park Wood, near Harefield, Middlesex, abundantly. *Blackstone*. In woods between Beconsfield and Wickham, plentifully. *Huds*. On the north sides of the High Rocks, Tonbridge Wells, and elsewhere in that neighbourhood. *Forster*.

Perennial. *April, May*.

Root whitish, toothed, creeping horizontally, branched and subdivided. *Stems* from the terminal buds of the preceding year, solitary, erect, leafy, from $1\frac{1}{2}$ to 2 feet high. *Leaves* alternate, bright green; several of the lowermost pinnate, of 5 leaflets; others ternate; upper ones simple; all lanceolate, acute, variously serrated, accompanied for the most part with ovate, dark purple, scaly, axillary bulbs, by which the plant is propagated. *Fl.* purple, corymbose, large and handsome, inodorous, hardly ever perfecting pods or seed, the bulbs furnishing an ample increase.

332. CARDAMINE. Ladies'-smock.

Linn. Gen. 338. *Juss.* 239. *Fl. Br.* 696. *DeCand. Syst.* v. 2. 245. *Tourn.* t. 109. *Lam.* t. 562. *Gærtn.* t. 143.

Cal. a little unequal at the base; leaves ovate-oblong, obtuse, slightly spreading, deciduous, 2 of them protuberant, in some degree, below their insertion. *Pet.* obovate, rather upright, undivided, tapering at the base into short claws. *Filam.* awl-shaped, simple, the 2 shortest with a gland at the base, next the calyx. *Anth.* small, oblong-heart-shaped, acute, recurved. *Germ.* linear, slender. *Style* scarcely any. *Stigma* obtuse, entire. *Pod* sessile, erect, linear, compressed laterally; valves flat, without ribs, scarcely narrower than the bordered partition, bursting elastically from the base, and mostly revolute. *Seeds* ovate, not bordered, inserted alternately in a single row; their stalks simple, short and slender; cotyledons accumbent.

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Herbs of more humble stature than the last genus, of various duration and magnitude, generally smooth. *Leaves* either undivided, cut, lobed, or pinnated. *Roots* fibrous, or somewhat toothed. *Fl.* either small and white, sometimes wanting the *petals* and shorter *stamens*; or pale rose-coloured and larger. Species numerous, natives of various countries, generally preferring watery situations.

* *Leaves simple.*

1. *C. bellidifolia*. Daisy-leaved Ladies'-smock.

Leaves simple, ovate, slightly wavy, entire; the radical ones much shorter than their footstalks. Style short, conical.

C. bellidifolia. Linn. *Sp. Pl.* 913. *Fl. Lapp. ed.* 2. 222. *t.* 9. *f.* 2. Willd. *v.* 3. 481. *With.* 577. *Fl. Br.* 697. *Engl. Bot.* *v.* 33. *t.* 2355. Hook. *Scot.* 199. DeCand. *Syst.* *v.* 2. 249. *Fl. Dan.* *t.* 20. Jacq. *Misc.* *v.* 1. 148. *t.* 17. *f.* 2. Allion. *Pedem.* *v.* 1. 260. *t.* 18. *f.* 3.

C. n. 476 *α*. Hall. *Hist.* *v.* 1. 207.

In moist, grassy, lofty, alpine pastures.

Gathered wild in Scotland by Mr. Milne. *Withering*. No person besides seems to have met with it.

Perennial. *August*.

Root rather woody, divided at the crown. *Herb* 2 or 3 inches high, unbranched, erect, bright green, smooth. *Leaves* sometimes a little wavy or angular, the uppermost nearly sessile. *Fl.* few, corymbose. *Cal.* purplish. *Pet.* white, erect. *Pods* hardly an inch long, crowned with the capitate *stigma*, on a short thick *style*.

** *Leaves pinnate.*

2. *C. impatiens*. Impatient Ladies'-smock.

Leaves pinnate; leaflets lanceolate, mostly cut. Stipulas fringed.

C. impatiens. Linn. *Sp. Pl.* 914. Willd. *v.* 3. 485. *Fl. Br.* 697. *Engl. Bot.* *v.* 2. *t.* 80. Hook. *Scot.* 198. DeCand. *Syst.* *v.* 2. 261. Ehrh. *Herb.* 87. *Fl. Dan.* *t.* 1339.

C. n. 471. Hall. *Hist.* *v.* 1. 205.

C. impatiens, vulgo *Sium minus impatiens*. Raii *Syn.* 299.

Sium minus impatiens. Ger. *Em.* 260. *f.*

S. minimum. Alpin. *Exot.* 332. *t.* 331.

Sisymbrium Cardamines species quædam insipida. Bauh. *Hist.* *v.* 2. 886. *f.*

Nasturtium minimum annuum, flore albo. Moris. *v.* 2. 221. *sect.* 3. *t.* 4. *f.* 1.

Impatient Cress. Petiv. *H. Brit.* *t.* 47. *f.* 7.

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In shady, rather moist, rocky situations, in the north of England ; rare in Scotland.

Under the rocks by the river side at Matlock bath, Derbyshire ; and in various parts of Westmoreland and Cumberland.

Annual. *May, June.*

Root small, tapering. *Herb* erect, slender, pale green, smooth in every part, except the *stipulas*. *Stem* $1\frac{1}{2}$ or 2 feet high, generally a little branched, leafy, angular, hollow, often zigzag. *Leaves* of numerous opposite lanceolate *leaflets*, with an odd one ; all equal, more or less notched, rarely entire ; paler beneath. *Stipulas* lanceolate, acute, deflexed, clasping the stem, all finely fringed, and surely, (notwithstanding the theory of my learned friend DeCandolle, who thinks them merely segments of a pinnatifid leaf,) as evidently *stipulas* as in any plant whatever. *Fl.* numerous, extremely small, white, occasionally destitute of *petals*. *Pods* erect, very slender, composing long clusters, and discharging their *seeds* with a crackling noise, and great force, on the slightest touch or concussion, by means of the revolute valves. The whole plant is disagreeably bitterish and pungent, by no means, as John Bauhin terms it, insipid.

3. *C. hirsuta*. Hairy Ladies'-smock.

Leaves pinnate, without stipulas ; leaflets stalked, roundish-oblong, notched.

C. hirsuta. *Linn. Sp. Pl.* 915. *Willd.* v. 3. 486. *Fl. Br.* 698. *Engl. Bot.* v. 7. t. 492. *Curt. Lond. fasc.* 4. t. 48. *Hook. Scot.* 199. *DeCand. Syst.* v. 2. 259. *Scop. Carn.* v. 2. 21. t. 38.

C. flexuosa. *With.* 578.

C. parviflora. *Lightf.* 1104. *With. ed.* 2. 686.

C. impatiens. *Fl. Dan.* t. 735.

C. impatiens altera hirsutior. *Raii Syn.* 300.

C. n. 472. *Hall. Hist.* v. 1. 205.

C. quarta. *Dalech. Hist.* 659. f.

Sisymbrium aquaticum alterum. *Camer. Epit.* 270. f.

Hairy Cress. *Petiv. H. Brit.* t. 47. f. 4.

In waste or cultivated ground, especially in moist shady places, very frequent.

Annual. *March—June.*

Root of many white fibres. *Herb* variable in size and luxuriance, deep green, more or less hairy, rarely quite smooth. *Stem* from 3 to 12 inches, or more, in height, erect, usually furnished with lateral branches of various lengths, leafy, angular, often zigzag, hollow in the centre, clothed with fine, prominent, scattered hairs. *Leaves* alternate, all pinnate, on short stalks, without *stipulas* ; *leaflets* stalked, sometimes alternate, all for the most part somewhat hairy ; those of the radical leaves roundish, or heart-shaped, coarsely notched ; those of the lower or middle part of the stem more oblong ; the upper ones linear-obovate,

or quite linear, obtuse, generally entire, but in this respect, as well as in length, they vary. *Fl.* small, white, corymbose. Two shorter *stamens* often wanting. *Pods* in long clusters, erect, slender, smooth, or occasionally hairy, their valves undulated by the projection of the seeds; *stigma* almost sessile.

Whatever the *C. sylvatica*, *umbrosa* and *parviflora* of other authors may be, the Linnæan *parviflora* is clearly a distinct species, with all its *leaflets* oblong and nearly entire, the *stem* bushy; the *Pods* shorter, with a more evident *style*. This plant is well represented in Gmelin's *Fl. Sibirica*, v. 3. t. 64. I know nothing like it in Britain. We have most assuredly only one species as above described, nor have I any other from Switzerland, Haller's n. 472 β , confused in his *Nomenclator* with n. 473, being truly a variety, and by no means the genuine *parviflora*. I have his 472 in various states from the Rev. Mr. DuCros, who remarks that *flowers* with 4, 5, or 6 *stamens* grow on the same plant.

To account for the strange error in *Fl. Dan.*, where this species is named *C. impatiens*, we must recollect that after Oeder gave up the publication of that work, the editors merely named the plants from a view of the drawings, in too hasty and superficial a manner, calling *Mentha hirsuta* *Origanum vulgare*; *Cardamine amara*, t. 148, (which Haller quotes t. 48,) *C. hirsuta*; the true *hirsuta*, not adverting to its obvious want of stipulas, *C. impatiens*; nor are these all the errors of a similar kind that might be pointed out; see *Raphanus Raphanistrum*. It is now in much better hands.

4. *C. pratensis*. Meadow Ladies'-smock. Cuckoo-flower.

Leaves pinnate, without stipulas; leaflets of the radical ones roundish and toothed; those of the stem-leaves lanceolate, entire. Petals with a tooth upon the claw.

C. pratensis. Linn. *Sp. Pl.* 915. Willd. v. 3. 487. *Fl. Br.* 699. *Engl. Bot.* v. 11. t. 776. *Curt. Lond. fasc.* 3. t. 40. *Mart. Rust.* t. 95. *Woodv.* t. 30. *Hook. Scot.* 198. *DeCand. Syst.* v. 2. 256. *Fl. Dan.* t. 1039. *Ehrh. Pl. Off.* 417.

C. n. 473. *Hall. Hist.* v. 1. 206.

Cardamine. *Raii Syn.* 299. *Ger. Em.* 259. f.

Gauchblüm. *Brunf. Herb.* v. 1. 218. f.

Nasturtium pratense. *Trag. Hist.* 83. f.

N. pratense, magno flore. *Bauh. Pin.* 104. *Moris.* v. 2. 223. sect. 3. t. 4. f. 7, bad.

N. agreste. *Fuchs. Hist.* 325. f.

N. aquaticum simpliciflore, et flore pleno. *Besl. Hort. Eyst. vern.* ord. 1. t. 3.

Hiberis. *Fuchs. Ic.* 185. f.

Sisymbrium aquaticum alterum. *Matth. Valgr.* v. 1. 443. f; flowers altogether erroneous; copied in *Dalech. Hist.* 658. f. 2.

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S. cardamine tertia Dodonæi. *Dalech. Hist.* 659. *f.*; copied in *Bauh. Hist.* v. 2. 889. *f.* 1.

Flos Cuculi. *Dod. Pempt.* 592. *f.*; not good; copied in *Dalech. Hist.* 659. *f.* 3; and reprinted in *Ger. Em.* 259. *f.* 2.

Common in meadows and moist pastures.

Perennial. *April, May.*

Root tuberous, somewhat toothed in the manner of the genus *Dentaria*, to which the affinity of this species is remarkable, see *Fl. Br. and Engl. Bot.*, and with which therefore the accurate Mr. Brown has united the whole genus; see *Dentaria. Herb* variable in luxuriance; generally smooth, of a shining green; now and then a little hairy. *Stem* about a foot high, or more, round, leafy, simple. *Radical leaves* several, on long stalks, each of one or more pairs of roundish, or heart-shaped, wavy, angular, or toothed *leaflets*, sometimes viviparous, the terminal one largest; *stem-leaves* of more numerous, and much narrower, *leaflets*, which are in general linear, entire, and smooth. *Fl.* corymbose, numerous, large and handsome, either light purple, flesh-coloured, or white; sometimes more or less double. The *petals* are remarkable for a tooth, or notch, on the claw, noticed in Haller, but not from his own observation. *Pods* not often perfected. *Style* more prominent than in some other species.

The *flowers*, recent or dried, have been reported to cure Epilepsy, but unhappily do not deserve such credit. They are agreeably pungent, and may be eaten with other herbs in a salad. They come with the Cuckoo, whence one of their English, as well as Latin, names; and they cover the meadows as with linen bleaching, which is supposed to be the origin of the other, now extended to the whole genus. They are associated with pleasant ideas of spring, and join with the White Saxifrage, the Cowslip, Primrose, and Hare-bell, to compose many a rustic nosegay.

5. *C. amara.* Bitter Ladies'-smock.

Leaves pinnate, without stipulas; leaflets of the lowermost roundish; of the rest toothed or angular. Stem creeping at the base. Style obliquely elongated.

C. amara. *Linn. Sp. Pl.* 915. *Willd. v.* 3. 488. *Fl. Br.* 699. *Engl. Bot. v.* 14. *t.* 1000. *Curt. Lond. fasc.* 3. *t.* 39. *Hook. Scot.* 198. *DeCand. Syst. v.* 2. 255. *Villars Dauph. v.* 3. 362. *t.* 39.

C. n. 474. *Hall. Hist. v.* 1. 206.

C. flore majore elatior. *Raii Syn.* 299.

Sisymbrium Cardamine, sive *Nasturtium aquaticum*, flore majore, elatius. *Bauh. Hist. v.* 2. 885. *f.*

Nasturtium aquaticum majus et amarum. *Bauh. Pin.* 104. *Prodr.* 45. *f.* *Moris. v.* 2. 224.

Bitter Cress. *Petiv. H. Brit. t.* 47. *f.* 1.

In watery places, by the sides of rivers and brooks, but not common.

TETRADYNAMIA—SILIKUOSA. *Nasturtium*. 119

About London in several places. *Huds. and Curtis*. Between Kew and Mortlake. *Bishop of Carlisle*. Near Rippon. *Mr. W. Brunton*. In King-street meadows, Norwich.

Perennial. *April, May*.

Root toothed, somewhat creeping. *Stems* 1 to 2 feet high, leafy, a little zigzag, more or less hairy, their lower part creeping, with several radicles, and sometimes a few slender scions. *Leaflets* all dilated; those of the upper leaves oblong or elliptical, deeply and unequally wavy or notched; those of the radical ones more rounded, obtuse and entire. *Fl.* the size of the last, but always white or cream-coloured, with violet *anthers*. *Mr. Curtis* first pointed out the essential mark of this species, in the slender, obliquely elongated, *style*, and minute *stigma*, which seem to be deciduous, still leaving the *pod* with a sharp straight point.

C. hirsuta of *Fl. Dan. t. 148*, which is any thing rather than real *hirsuta*, is suspected by *DeCandolle* to be a variety of *amara*, and so it seems to me.

C. amara, before it flowers, greatly resembles Water Cresses, but the taste is bitter and nauseous. *Nasturtium aquaticum* of the *Hortus Eystettensis*, with its double variety, evidently belongs not to this, but to *C. pratensis*.

333. NASTURTIIUM. Cress.

Br. in Ait. H. Kew. v. 4. 109. DeCand. Syst. v. 2. 187. Comp. ed. 4. 108.

Radicula. Dill. Gen. 121. t. 6.

Cal. equal at the base; leaves ovate-oblong, obtuse, spreading, somewhat coloured, deciduous. *Pet.* obovate, spreading, undivided, tapering into short claws; occasionally wanting. *Filam.* awl-shaped, simple; the 2 shortest each with a gland at the base withinside. *Anth.* incumbent, somewhat heart-shaped. *Germ.* cylindrical. *Style* erect, short, cylindrical. *Stigma* obtuse, notched. *Pod* nearly cylindrical, rather turgid, shortish; valves concave, without ribs or keel. *Seeds* roundish, flattened, without a border, irregularly disposed, on slender stalks; cotyledons accumbent.

Branching *herbs*, almost invariably smooth, throwing out numerous radicles, and either altogether aquatic, or at least growing in wet ground. *Stem* roundish, with slight irregular angles. *Leaves* pinnate, or pinnatifid. *Fl.* corymbose, numerous, white or yellow. *Pods* ascending, on the long, horizontal, partial *stalks* of numerous long *clusters*.

Mr. Brown has happily separated this genus from *Sisym-*

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brium, with which its various species have long been thought, by the most experienced botanists, to disagree, as much as they agree among themselves. The accumbent *cotyledons* decide the question; and the short, thick, turgid *Pods* afford a ready and obvious character.

The name is Latin, and, according to Pliny, belonged to some stimulating plant, pungent to the nostrils. The only objection to its present adaptation is, that it has been applied so variously by botanists to many other herbs; but it well suits our first, or best-known, species.

1. *N. officinale*. Common Water Cress.

Leaves pinnate; leaflets roundish-heart-shaped, wavy.

N. officinale. *Br. in Ait. H. Kew. v. 4. 110. DeCand. Syst. v. 2. 188. Comp. ed. 4. 112. Hook. Scot. 201.*

Nasturtium. *Dorsten. Botan. 197, 2. f.*

N. aquaticum. *Trag. Hist. 82. f. Dod. Pempt. 592. f.*

N. aquaticum supinum. *Bauh. Pin. 104. Moris. v. 2. 223. sect. 3. t. 4. f. 8.*

N. aquaticum, sive Cratevæ Sium. *Ger. Em. 257. f.*

Sisymbrium Nasturtium. *Linn. Sp. Pl. 916. Willd. v. 3. 489. Fl. Br. 700. Engl. Bot. v. 12. t. 855. Curt. Lond. fasc. 6. t. 44. Woodv. t. 48. Fl. Dan. t. 690. Bull. Fr. t. 302.*

S. n. 482. Hall. Hist. v. 1. 209.

S. Cardamine. *Fuchs. Hist. 723. f. Ic. 419. f.*

S. Cardamine, seu Nasturtium aquaticum. *Raii Syn. 300. Bauh. Hist. v. 2. 884. f.*

S. aquaticum. *Matth. Valgr. v. 1. 442. f. Camer. Epit. 269. f.*

Water Cress. *Petiv. H. Brit. t. 47. f. 2.*

β . *Nasturtium aquaticum, foliis minoribus, præcocius*. *Raii Syn. 301. ed. 2. 172.*

Early Water Cress. *Petiv. H. Brit. t. 47. f. 3.*

γ . *Nasturtium aquaticum, pinnulis paucioribus*. *Dill. in Raii Syn. 301.*

In clear springs, rivulets and ponds, very common and abundant. Perennial. *June, July.*

Roots of many crowded, long, simple, white fibres. *Stems* spreading, for the most part floating, leafy, branched, round with several angles, mostly smooth, but occasionally, when out of the water, a little downy or hairy; they vary considerably in length. *Leaves* smooth, deep shining green, pinnate, or somewhat lyrate, the terminal leaflet being largest; all wavy rather than toothed. *Stipulas* none. *Fl.* white, or slightly purple, with a purplish *calyx*. *Pods* barely an inch long, tumid and undulated at the sides, smooth, curved upwards, each on a horizontal stalk, variable in length. The two varieties are of no moment.

Water Cresses are well known for their agreeable warmth and flavour, in the form of a salad, and are esteemed a wholesome stomachic. I should have preferred the old established Latin name *N. aquaticum*; but would not, without necessity, dissent from the two great authorities who have established the present genus.

2. *N. sylvestre*. Creeping Yellow Cress.

Leaves pinnate; leaflets lanceolate, deeply serrated or cut.
Root creeping.

N. sylvestre. *Br. in Ait. H. Kew.* v. 4. 110. *DeCand. Syst.* v. 2. 190. *Comp. ed.* 4. 112, *Hook. Scot.* 201.

Sisymbrium sylvestre. *Linn. Sp. Pl.* 916. *Willd.* v. 3. 489. *Fl. Br.* 701. *Engl. Bot.* v. 33. t. 2324. *Curt. Lond. fasc.* 3. t. 41.

S. n. 485. *Hall. Hist.* v. 1. 210.

Brachiolobos sylvestris. *Allion. Pedem.* v. 1. 278. t. 56. f. 2.

Eruca sylvestris. *Fuchs. Hist.* 263. f.

E. aquatica. *Raii Syn.* 297. *Ger. Em.* 248. f.

E. quibusdam sylvestris repens, flosculo purpureo (rather parvo) luteo. *Bauh. Hist.* v. 2. 866. f.

E. sylvestris seu palustris minor procumbens et repens luteo parvoque flore. *Moris.* v. 2. 231. sect. 3. t. 6. f. 17.

Raphanus minimus repens luteus, foliis tenuiter divis. *Moris.* v. 2. 236. sect. 3. t. 7. f. 1.

Water Rocket. *Petiv. H. Brit.* t. 46. f. 5.

In gravelly wet meadows, about the margins of rivers and ditches. In Tothill fields, and other low watery situations in the vicinity of the Thames. *Hudson and Curtis*. On Bungay Common, Suffolk. *Mr. Woodward*. Below Leeds. *Rev. Mr. Wood*. Near Worcester. *Dr. Stokes*. Frequent in Bedfordshire. *Rev. Dr. Abbot*.

Perennial. *June—September*.

Root creeping extensively. Stems erect, though wavy or zigzag, a foot or more in height, leafy, angular, and furrowed, roughish with minute points. Leaves pinnate; the upper ones pinnatifid; the lower stalked; leaflets or segments of all elliptic-lanceolate, or oblong, smooth, unequally serrated, or variously jagged, often decurrent. Clusters terminal, paniced, much lengthened out after flowering, and becoming zigzag. Fl. numerous, small, of a golden yellow, the calyx partaking of the same colour. Pods very sparingly perfected.

3. *N. terrestre*. Annual Yellow Cress.

Leaves pinnatifid, unequally toothed. Root tapering. Petals scarcely so long as the calyx. Pod curved.

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N. terrestre. *Br. in Ait. H. Kew.* v. 4. 110. *Comp. ed.* 4. 112. *Hook. Scot.* 201.

N. palustre. *DeCand. Syst.* v. 2. 191.

Sisymbrium terrestre. *Fl. Br.* 701. *Engl. Bot.* v. 25. t. 1747. *Curt. Lond. fasc.* 5. t. 49. *Wahlenb. Lapp.* 179.

S. palustre. *Pollich v.* 2. 230. *Willd. Sp. Pl.* v. 3. 490.

S. islandicum. *Fl. Dan.* t. 409.

S. amphibium α . *Huds.* 296. *Lightf.* 352.

S. amphibium β . *Linn. Suec. ed.* 2. 232. *Fl. Dan.* t. 931.

Radicula n. 487. *Hall. Hist.* v. 1. 211.

R. sylvestris sive palustris. *Bauh. Hist.* v. 2. 866. f. 867; but not of *Ray*.

Raphanus aquaticus, foliis in profundas lacinias divisis. *Bauh. Pin.* 97. *Prodr.* 38. f. *Dill. in Raii Syn.* 301. *Moris.* v. 2. 237. sect. 3. t. 7. f. 3.

Small Jagged Water Radish. *Petiv. H. Brit.* t. 49. f. 9.

About the banks of ditches, and in damp but not very watery meadows.

Plentiful about London. *Curtis.* On Bungay Common, Suffolk. *Mr. Woodward.* Bedfordshire, but rare. *Abbot.* Oxfordshire. *Sibth.* Isle of Ely. *Bishop of Carlisle.* In the meadows below Norwich, and in various other places.

Annual. *June—September.*

Root simple, spindle-shaped, small. *Herb* erect or recumbent, about a foot high, sometimes not more than 3 or 4 inches, smooth, bright green. *Stem* leafy, smooth, furrowed, generally branched. *Leaves* lyrate, deeply pinnatifid, partially and unequally toothed or serrated. *Fl.* very small, of a paler hue than the last. *Cal.* but slightly coloured. *Pet.* shorter than the calyx, often notched. *Pods* ascending, of a short, thick, somewhat curved, obtuse figure, each on a horizontal stalk, about its own length, and all together composing long aggregate clusters. *Style* permanent, thick and short, with a peltate stigma.

Mr. Curtis, from his own observations, well determined this species, though he did not attempt to settle its synonyms, which were, in his time, singularly confused, and that confusion has since been augmented. Neither *Linnaeus* nor *Hudson* understood the present plant, however distinct it appears to us. *Curtis's* name is at least as good as *palustre*, and indeed more correct; so that though the latter may be of a prior date, I have not thought it worth adopting. *Haller* was one of the few botanists, who knew this species well, and his synonyms are justly applied. The annual, not creeping, root, and the copious, short, thick pods, at once distinguish it from the foregoing, as well as from the following.

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4. *N. amphibium*. Amphibious Yellow Cress. Great Water Radish.

Leaves oblong, pinnatifid, or serrated. Roots fibrous. Petals longer than the calyx. Pod elliptical.

N. amphibium. *Br. in Ait. H. Kew. v. 4. 110. DeCand. Syst. v. 2. 196. Comp. ed. 4. 112. Hook. Scot. 201.*

Sisymbrium amphibium. *Linn. Sp. Pl. 917. Willd. v. 3. 491. Fl. Br. 702. Engl. Bot. v. 26. t. 1840. Fl. Dan. t. 984.*

S. (not *Nasturtium*) *palustre repens latifolium majus. Mich. Hort. Florent. 89.*

Radicula n. 486. Hall. Hist. v. 1. 211.

R. sylvestris seu palustris. Raii Syn. 301; but not of J. Bauhin.

Raphanus aquaticus. Ger. Em. 240. f.

R. aquaticus alter. Bauh. Prodr. 38. f. good.

R. sylvestris officinarum aquaticus. Lob. Ic. 319. f.

Broad Water Radish. *Petiv. H. Brit. t. 49. f. 8.*

β. Raphanus aquaticus. Bauh. Hist. v. 2. 867. f.

Great Jagged Water Radish. *Petiv. H. Brit. t. 49. f. 10; copied from Bauhin.*

In rivers, ditches, and places about their banks, not constantly overflowed, frequent.

Perennial. *June—August.*

Roots long and stringy, perpendicular, not creeping, but throwing out numerous fibres, such as proceed from the lower parts of the trailing or floating, wide-spreading, leafy, striated, not much branching, *stem*. *Leaves* generally smooth, but occasionally downy when growing in dry situations; the lowermost on long stalks, deeply pectinated under water, otherwise elliptic-lanceolate, cut, or serrated; upper ones sessile, or clasping, oblong, pectinated, serrated, or nearly entire, all varying greatly according to the depth of the water, or strength of the current; on such plants as grow entirely out of the water, the *leaves* are smaller, broader, and merely serrated. *Fl.* small, bright yellow, plentiful, in aggregate *clusters*. *Pet.* always longer than the *calyx*. *Pods* usually small and abortive, roundish, tipped with the *style* often as long as themselves.

This plant is noticed by the celebrated M. Chateaubriand, in his account of England, for its wonderful powers of increase by root. He observed it in the river near Beccles, where he long resided as an emigrant, and his rather florid description has excited wonder and curiosity in many, who daily, perhaps, pass over, without regard, several no less interesting works of their Creator. Some of M. DeCandolle's references belong to the foregoing.

334. SISYMBRIUM. Hedge-mustard.

Linn. Gen. 338. Juss. 239. Fl. Br. 700. Comp. ed. 4. 108. Br. in Ait. H. Kew. v. 4. 111. DeCand. Syst. v. 2. 458.

Erysimum. *Tourn. t.* 111.

Cal. nearly equal at the base, somewhat spreading; leaves oblong, concave, slightly coloured, deciduous. *Pet.* obovate-oblong, obtuse, undivided, flat; claws nearly the length of the calyx. *Filam.* thread-shaped, simple, distinct, erect. *Anth.* oblong-heart-shaped, a little spreading. *Germ.* linear, slender, sessile. *Style* very short. *Stigma* capitate, notched, permanent. *Pod* linear, roundish, or slightly angular; valves linear, concave, wavy; partition narrow, membranous. *Seeds* ranged alternately, forming a single row, numerous, small, ovate, or oblong, not bordered; cotyledons flat, incumbent, sometimes (according to Mr. Brown) obliquely.

Annual or perennial *herbs*, very various in foliage. *Fl.* yellow or whitish, mostly small. *Pods* erect, in very long clusters. Flavour pungent, not fetid.

1. *S. officinale*. Common Hedge-mustard.

Pods pressed close to the main stalk, awl-shaped, downy. Leaves runcinate, hairy. Stem rough with reflexed bristles.

S. officinale. *Scop. Carn. ed. 2. v. 2. 26.* *Br. in Ait. H. Kew. v. 4. 111.* *DeCand. Syst. v. 2. 459.* *Comp. ed. 4. 112.* *Hook. Scot. 202.*

Erysimum officinale. *Linn. Sp. Pl. 922.* *Willd. v. 3. 509.* *Fl. Br. 706.* *Engl. Bot. v. 11. t. 735.* *Curt. Lond. fasc. 5. t. 50.* *Woodv. suppl. t. 244.* *Fl. Dan. t. 560.* *Bull. Fr. t. 259.*

E. n. 478. *Hall. Hist. v. 1. 208.*

E. Dioscoridis Lobelii. *Ger. Em. 254. f.*

E. vulgare. *Bauh. Pin. 100.* *Moris. v. 2. 218. sect. 3. t. 3. f. 1.*

Eruca hirsuta, *siliquâ cauli adpressâ*, *Erysimum dicta.* *Raii Syn. 298.*

Verbena foemina. *Trag. Hist. 102. f;* but not of *Brunfelsius*.

V. recta sive mas. *Fuchs. Hist. 592. f.*

Irio sive Erysimum Dioscoridis. *Lob. Ic. 206. f.* *Dod. Pempt. 714. f.*

Hedge Mustard. *Petiv. H. Brit. t. 46. f. 3.*

In waste ground, by road sides, and on banks, common. It springs up wherever houses have been burnt, as Haller records.

Annual. *June, July.*

Herb of a dull green, minutely hairy, or downy. *Stem* solitary, 2 feet high, erect, with numerous horizontal branches, leafy, round, clothed with fine deflexed bristles. *Leaves* lyrate, their lobes runcinate, unequally toothed; the upper ones narrowest. *Fl.* pale yellow, small, in little corymbose heads, soon becoming very long straight close clusters, of erect, tapering pods, finely

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downy, rather more than half an inch long, on very short stalks.
Seeds not numerous, about 6 in each cell.

An infusion of this herb, or of its seeds, is reputed to be good for the asthma, hoarseness, or any debility of the throat or vocal organs; as also to promote expectoration. But it is out of use, and probably Common White Mustard may, for any purpose, be preferable.

2. *S. Irio*. Broad Hedge-mustard. London Rocket.

Leaves runcinate, toothed, smooth as well as the stem. Pods erect.

S. Irio. Linn. *Sp. Pl.* 921. Willd. *v.* 3. 503. *Fl. Br.* 705. *Engl. Bot.* *v.* 23. *t.* 1631. *Curt. Lond. fasc.* 5. *t.* 48. *DeCand. Syst.* *v.* 2. 467. *Jacq. Austr. t.* 322.

Erysimum latifolium neapolitanum. *Raii Syn.* 298.

E. latifolium majus glabrum. *Bauh. Pin.* 101. *Moris. v.* 2. 218. *sect.* 3. *t.* 3. *f.* 3.

Irio lævis Apulus, *Erucæ folio*. *Column. Ecphr. v.* 1. 264. *t.* 265.

Broad Hedge Mustard. *Petiv. H. Brit. t.* 46. *f.* 4.

In waste ground, or on banks and heaps of rubbish, chiefly about London.

About Chelsea, Battersea, and the whole neighbourhood of London. *Ray, Curtis*. At Faulkourn, Essex, and on the walls of Berwick-upon-Tweed. *Ray*. It covered the ground in the spring after the great fire of London. Haller records the same tendency in the preceding species.

Annual. *July, August*.

Herb about 2 feet high, light green, with a hot flavour of Mustard, and generally, as *Curtis* observes, entirely smooth. The upper part of the stem however is occasionally downy, and the calyx hairy. Stem erect, branched, round and quite even, leafy. Leaves pinnatifid, runcinate, acute, toothed chiefly at the foremost, or upper, edges; the upper ones lanceolate, with an arrow-shaped base. *Fl.* yellow, small for the size of the plant. *Pods* 2 inches long, slender, nearly erect, rugged when ripe. *Seeds* very abundant.

3. *S. Sophia*. Fine-leaved Hedge-Mustard, or Flix-weed.

Leaves doubly pinnatifid, a little hairy. Petals smaller than the calyx.

S. Sophia. Linn. *Sp. Pl.* 920. Willd. *v.* 3. 500. *Fl. Br.* 704. *Engl. Bot.* *v.* 14. *t.* 963. *Mart. Rust. t.* 57. *Hook. Scot.* 202. *DeCand. Syst. v.* 2. 474. *Fl. Dan. t.* 528. *Bull. fr. t.* 271.

S. n. 484. *Hall. Hist. v.* 1. 210.

Erysimum Sophia dictum. *Raii Syn.* 298.

Sophia Chirurgorum. *Ger. Em.* 1068. *f.* *Lob. Ic.* 738. *f.*

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Seriphium germanicum. *Trag. Hist.* 338. *f. Bauh. Hist.* v. 2. 886. *f.*

S. Absinthium. *Fuchs. Hist.* 2. *f.*

Descurea. *Guett. Obs.* v. 2. 164.

About rubbish, dry banks, waste ground, and dunghills, very frequent.

Annual. *July—September.*

Root small and tapering. *Whole plant* of a slender delicate structure, about 2 feet high. *Stem* branched, bushy, erect, a little downy. *Leaves* doubly and very deeply pinnatifid, with fine, downy or hairy, linear-lanceolate, entire segments. *Fl.* small, greenish yellow, their *petals* concealed by the *calyx*. *Pods* very numerous, erect, somewhat curved, slender, about an inch long, rugged, or beaded, from the projection of the numerous minute *seeds*, and composing long erect *clusters*, with spreading partial stalks.

Sophia Chirurgorum, "the Wisdom of Surgeons," would not be evinced by any reliance on this herb for the cure of fractured limbs; nor are its antidyenteric virtues, to which its old English name alludes, better ascertained.

335. BARBAREA. Winter-cress.

Br. in Ait. H. Kew. v. 4. 109. *DeCand. Syst.* v. 2. 205. *Comp. ed.* 4. 108.

Cal. nearly equal at the base, erect; leaves oblong, concave, somewhat coloured, deciduous. *Pet.* obovate, obtuse, undivided, flat; claws nearly the length of the calyx. *Filam.* awl-shaped, simple, distinct, erect, with a gland at each side between the 2 shorter ones and the *pistil*. *Germ.* oblong, quadrangular. *Style* short, cylindrical. *Stigma* obtuse, simple. *Pod* linear, with 4 angles, slightly compressed; valves concave, keeled, even and straight; partition membranous, thick-edged. *Seeds* ranged alternately, in a single row, ovate, flattish, not bordered; cotyledons flat, accumbent.

Upright, smooth, dark green, perennial or biennial *herbs*. *Stems* rather angular. *Lower leaves* lyrate; *upper* pinnatifid or toothed. *Fl.* yellow. *Pods* erect, rather stout, in long *clusters*.

1. *B. vulgaris*. Bitter Winter-cress. Yellow Rocket.

Lower leaves lyrate, the terminal lobe roundish; upper obovate, toothed.

B. vulgaris. *Br. in Ait. H. Kew.* v. 4. 109. *DeCand. Syst.* v. 2. 206. *Comp. ed.* 4. 112. *Hook. Scot.* 200.

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Barbarea. *Dod. Pempt.* 712. *f.* *Ger. Em.* 243. *f.* *Bauh. Hist.* v. 2. 868. *f.* 869.

Sanctæ Barbaræ herba. *Trag. Hist.* 101. *f.* *Fuchs. Hist.* 746. *f.*

Erysimum Barbarea. *Linn. Sp. Pl.* 922. *Willd.* v. 3. 509. *Fl. Br.* 706. *Engl. Bot.* v. 7. t. 443. *Fl. Dan.* t. 985. *Ehrh. Pl. Off.* 427.

E. n. 479. *Hall. Hist.* v. 1. 208.

Winter Cress. *Petiv. H. Brit.* t. 46. *f.* 1.

Common in rather moist waste ground, about hedges, or in marshy meadows.

Perennial. *May—August.*

Root tapering, somewhat woody. *Stem* about 2 feet high, simple or branched, leafy, stout, angular and furrowed. *Radical* and lower *stem-leaves* lyrate; upper ones becoming gradually less divided, clasping the stem; the uppermost of all obovate, and much diminished; all are variously toothed, strongly ribbed, of a firm texture, quite smooth. *Fl.* bright yellow, in round-headed, corymbose clusters. *Pod* not very acutely quadrangular, about an inch long, crowned by the thick, rather elongated, *style*.

The whole herb is nauseously bitter, and in some degree mucilaginous. Haller reports, after Kalm, that it is eaten in England as a salad. The latter probably confounded it with the following. A double-flowered variety, with innumerable *petals*, produced in long succession, and turning white as they fade, is frequent in gardens.

2. *B. præcox.* Early Winter-cress.

Lower leaves lyrate; upper deeply pinnatifid, with linear-oblong entire segments.

B. Præcox. *Br. in Ait. H. Kew.* v. 4. 109. *DeCand. Syst.* v. 2. 207. *Comp. ed.* 4. 113. *Hook. Scot.* 201.

B. foliis minoribus et frequentius sinuatis. *Dill. in Raii Syn.* 297.

Erysimum præcox. *Fl. Br.* 707. *Engl. Bot.* v. 16. t. 1129. *Willd. Sp. Pl.* v. 3. 510.

E. barbarea β . *Linn. Sp. Pl.* 922.

Sisymbrium Erucæ folio glabro, minus et præcocius. *Tourn. Inst.* 226.

Early Winter Cress. *Petiv. H. Brit.* t. 46. *f.* 2.

In watery grassy places, or on the banks of ditches.

On a hill half a mile north of Teignmouth, as well as near Dawlish, Kingsteington and Honiton, Devonshire, the soil a red brick clay. *Rev. Dr. Beeke, Dean of Bristol.* The plant occurs here and there about towns, having perhaps escaped from gardens.

Biennial. *April—October.*

Stems one or more, erect, $1\frac{1}{2}$ or 2 feet high, leafy, angular, smooth,

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a little branched, tinged at the bottom with a violet hue. *Radical leaves* the first year numerous, spreading on the ground, lyrate, with a rounded toothed terminal lobe, being much like the first species, but of a more neat and regular figure; the *stem-leaves* are often partly lyrate also, but the upper ones are deeply and regularly pinnatifid, with parallel, linear-oblong, bluntish, entire segments. *Fl.* fewer, smaller and paler than those of *B. vulgaris*. *Pods* thrice as long as in that species, exactly square, smooth. *Style* short, with a blunt, but not large, *stigma*.

This species, undoubtedly very distinct from the foregoing, propagates itself abundantly by seed, but the root is not perennial. It may be eaten like Water Cresses, with which it agrees in flavour, except being rather more pungent.

336. ERYSIMUM. Treacle-mustard.

Linn. Gen. 339. *Juss.* 239. *Fl. Br.* 706. *Comp. ed.* 4. 108. *Br. in Ait. H. Kew.* v. 4. 115. *DeCand. Syst.* v. 2. 490. *Gærtn. t.* 143. *Alliaria. DeCand. Syst.* v. 2. 488.

Cal. very nearly equal at the base; leaves oblong, concave, erect, slightly coloured, deciduous. *Pet.* obovate-oblong, obtuse, flat, their claws erect, the length of the calyx. *Filam.* thread-shaped, simple, distinct, upright, with a gland between the shorter one at each side, sometimes also between the 2 longer ones, and the pistil. *Anth.* roundish-oblong, rather spreading. *Germ.* oblong, quadrangular. *Style* very short. *Stigma* small, capitate, notched, permanent. *Pod* sessile, linear, equally quadrangular; valves concave, keeled, rectangular; partition membranous, crowned with the *style*, and the more or less deeply 2-lobed *stigma*. *Seeds* ovate, without a border, disposed in a single row; cotyledons flat, incumbent.

Herbs various in duration, erect, branched, either smooth, downy, or finely bristly. *Leaves* simple, often lanceolate and nearly entire. *Fl.* corymbose, yellow, sulphur-coloured, or white. *Pods* in very long upright clusters. Qualities warm and pungent.

1. *E. cheiranthoides*. Worm-seed Treacle-mustard.

Leaves lanceolate, obscurely toothed, roughish with close forked bristles. Pods erect, on horizontal stalks. Stigma almost sessile.

E. cheiranthoides. Linn. Sp. Pl. 923. *Willd. v.* 3. 511. *Fl. Br.*

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708. *Engl. Bot.* v. 14. t. 942. *Huds.* 287. *Hook. Scot.* 202.
DeCand. Syst. v. 2. 498. *Jacq. Austr.* t. 23. *Fl. Dan.* t. 731,
 bad, and t. 923, better. *Ehrh. Herb.* 97.

E. n. 477. *Hall. Hist.* v. 1. 207.

Cheiranthus erysimoides. *Huds.* 287.

Myagro affinis planta, siliquis longis. *Raii Syn.* 298. *Bauh. Hist.*
 v. 2. 894. f.

Camelina. *Ger. Em.* 273. f.

C. Myagrum alterum, thlaspi effigie. *Lob. Ic.* 225. f.

Treacle Worm-seed. *Petiv. H. Brit.* t. 45. f. 2.

In turnip fields, gardens, osier-holts, and hedges, not uncommon.
 Annual. *July.*

Root small, tapering. *Stem* erect, branched, angular, leafy, from
 1 to 2½ feet high, rough with small, closely deflexed, mostly
 simple bristles. *Leaves* of a dull green, sessile, except a few of
 the lower ones, lanceolate, variable in breadth, as well as in the
 number of their distant and shallow teeth, all clothed with very
 minute, crowded, close, forked bristles, such as are found also,
 still more minute, on the *Pods* and their stalks. *Fl.* numerous,
 small, yellow, with a whitish *calyx*. *Pet.* terminated by a shal-
 low notch. *Pods* full an inch long; their valves internally downy,
 which is remarkable. Their *seeds* are bitter, and have been used
 for destroying intestinal worms in children; being also one of
 the ingredients of the nauseous Venice Treacle.

2. *E. Alliaria.* Garlick Treacle-mustard. Jack by
 the hedge; or Sauce alone.

Leaves heart-shaped, broadly toothed, stalked.

E. Alliaria. *Linn. Sp. Pl.* 922. *Willd.* v. 3. 510. *Fl. Br.* 708.
Engl. Bot. v. 12. t. 796. *Curt. Lond. fasc.* 2. t. 48. *Woodv.*
suppl. t. 245. *Hook. Scot.* 202. *Fl. Dan.* t. 935. *Bull. Fr.* t. 338.

E. n. 480. *Hall. Hist.* v. 1. 208.

Hesperis allium redolens. *Raii Syn.* 293. *Moris.* v. 2. 252. sect. 3.
 t. 10. f. 6.

Alliaria. *Trag. Hist.* 86. f. *Fuchs. Hist.* 104. f. *Dod. Pempt.* 686. f.
Matth. Valgr. v. 2. 197. f. *Camer. Epit.* 589. f. *Ger. Em.* 794. f.
Dalech. Hist. 911. f, f. *Lob. Ic.* 530. f.

A. officinalis. *DeCand. Syst.* v. 2. 489.

Jack by the hedge. *Petiv. H. Brit.* t. 45. f. 1.

Common under hedges and in shady lanes.

Annual. *May.*

Whole *herb* smooth, of a deep shining green, exhaling when bruised
 a strong and nauseous scent of garlick, which seems the natural
 flavour of its tribe, condensed or augmented, we will not say
 improved. Yet the country people eat the young leaves with
 bread and butter. The *seeds* are said to be stronger than any
 other part. The *stem* is about a foot high, somewhat branched.

202 TETRADYNAMIA—SILIKUOSA. *Cheiranthus*.

Leaves stalked, broadly heart-shaped, acute, veiny, with many prominent broad teeth. *Fl.* plentiful, white, not unornamental to hedge banks in the spring. *Cal.* whitish, not quite closed. *Pods* erect, smooth, on spreading stalks.

3. *E. orientale*. Hare's-ear Treacle mustard.

Leaves elliptic-heart-shaped, obtuse, clasping the stem; radical ones obovate; all smooth, glaucous, undivided, entire.

E. orientale. *Br. in Ait. H. Kew. v. 4. 117. Comp. ed. 4. 113.*

E. perfoliatum. *DeCand. Syst. v. 2. 508.*

Brassica orientalis. *Linn. Sp. Pl. 931. Willd. v. 3. 545. Fl. Br. 717. Engl. Bot. v. 26. t. 1804. Pollich v. 2. 247. Jacq. Austr. t. 282.*

B. campestris perfoliata, flore albo. *Bauh. Pin. 112. Dill. in Raii Syn. 293. Moris. v. 2. 210. sect. 3. t. 2. f. 19.*

B. campestris prima. *Clus. Hist. v. 2. 127. f. Dalech. Hist. 525. f. Eruca n. 457. Hall. Hist. v. 1. 199.*

Perfoliata siliquosa. *Ger. Em. 536. f. Bauh. Hist. v. 2. 835. f.*

White Thorow Colewort. *Petiv. H. Brit. t. 45. f. 5.*

In fields and on cliffs near the sea.

In Essex, but rare. *Petiver*. Near Harwich, on the cliffs, as also at Bawdsey, near Orford, Suffolk. *Dale*. In fields near Godstone and Marshfield, Sussex. *Huds.*

Annual. *June*.

Root small, tapering. *Herb* glaucous, very smooth in every part, even the radical leaves. *Stem* from 1 to 2 feet high, seldom branched, bearing several clasping, not perfoliate, leaves; the radical ones obovate, recurved; all quite entire and a little fleshy. *Fl.* rather few, in a lax corymbose cluster, cream-coloured. *Pet.* but little spreading. *Pods* $2\frac{1}{2}$ or 3 inches long, exactly square, upright, though not quite straight.

Reichard quotes under this *Erysimum perfoliatum*, *Crantz Austr. (fasc. 1.) 27*, and he is copied by Willdenow and DeCandolle; but I find no such name any where in Crantz; and as the leaves are not perfoliate, *orientale*, adopted by Linnæus from Tournefort, though not a good name, does not require to be changed.

Brassica austriaca of *Jacq. Austr. t. 283*, which I had suspected might be the same species, is judged by Prof. DeCandolle to be different, having smaller more yellow flowers, and elevated ribs or veins on the valves of the pod. We have it not in England.

337. CHEIRANTHUS. Wall-flower.

Linn. Gen. 339. Juss. 238. Fl. Br. 709. Comp. ed. 4. 108. Br. in Ait. H. Kew. v. 4. 118. DeCand. Syst. v. 2. 178. Lam. t. 564. f. 1. Leucojum. Tourn. t. 107.

Cal. converging, compressed; leaves oblong, concave, erect, deciduous, 2 opposite ones protuberant at the base. *Pet.* obovate, spreading, entire or slightly notched; claws erect, the length of the calyx. *Filam.* awl-shaped, parallel, simple, distinct, each of the 2 outermost, or shortest, embraced at the bottom by a nectariferous gland. *Anth.* erect, oblong-arrow-shaped, acute, of 2 linear lobes. *Germ.* linear, compressed, a little tumid at each side, the length of the stamens. *Style* short, nearly cylindrical. *Stigma* either of 2 thick spreading lobes, or capitate and slightly notched, permanent. *Pod* linear, compressed, two-edged, rather convex at the sides, mostly with an elevated, longitudinal, central line; valves straight; partition membranous. *Seeds* ranged alternately, in a single row, ovate, compressed, slightly bordered at the summit, and often at one side also; cotyledons accumbent.

Biennial or perennial, herbaceous or somewhat shrubby. *Stem* branched, leafy, round, or slightly angular. *Leaves* lanceolate, entire or toothed. *Pubescence* close, simple, or divaricated, or somewhat starry. *Fl.* handsome, fragrant, yellow, purplish, or white, often particoloured, or changeable. *Ch. tenuifolius* of DeCandolle has a slight border at the top of the seed only.

1. *Ch. fruticulosus*. Wild Wall-flower.

Leaves lanceolate, acute; most hoary beneath, with simple close hairs. Stem shrubby. Branches angular. Style prominent.

Ch. fruticulosus. *Linn. Mant.* 94. *Willd. Sp. Pl.* v. 3. 516. *Fl. Br.* 709. *Engl. Bot.* v. 27. t. 1934. *Comp. ed.* 4. 113. *Hook. Scot.* 202. *Galp. Comp.* 56. *Davies Welsh Botanol.* 64.

Ch. Cheiri. *Huds.* 287. *With.* 586. *Relh.* 260. *Sibth.* 202. *Abbot* 144. *Hook. Lond.* t. 147? *DeCand. Syst.* v. 2. 180, var. μ .

Leucojum n. 443. *Hall. Hist.* v. 1. 193; from Mr. Davall and others.

L. Luteum, vulgò *Cheiri*, flore simplici. *Raii Syn.* 291. *Bauh. Hist.* v. 2. 572. f. reprinted in *Chabr. Ic.* 278. f. 4.

L. luteum minus fruticans. *Barrel. Ic.* t. 1228.

Viola petræa lutea. *Tabern. Krauterb.* 688. f.

On old walls.

Shrub. *April, May.*

Stem shrubby, erect, bushy, branched in a determinate manner; branches angular, leafy, hoary with close, bristly, silvery hairs, chiefly directed downward, like those on both sides of the leaves; though some point the contrary way, on the leaves as well as

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Pods, being perfectly distinct, as it seems to me, from the others, nor is there any forked or starry pubescence to be found. *Leaves* crowded, stalked, lanceolate, acute, almost invariably entire; the lowermost, if any, slightly serrated; all deep green, with more or less of a minute silvery hoariness, especially at the back. *Fl.* corymbose, sweet-scented; their *petals* always of a uniform bright golden yellow, not stained with brown or blood-red as in the garden *Ch. Cheiri*, though the *calyx* is purplish. *Pods* racemose, erect, $1\frac{1}{2}$ or 2 inches long, covered with close hairs chiefly, if not altogether, pointing upwards; each valve marked with an elevated central line, often vanishing about half way up, and hardly discernible at all in Mr. Davall's Swiss specimens; though very strong in some French ones, with shorter broader *Pods*, which most accord with Dr. Hooker's, the style excepted. *Style*, in all the specimens I have seen, about a line in length in the flower, rather more on the ripe pod, stout, angular, a little bristly, crowned with the cloven *stigma*, whose lobes are finally brought close together. The *seeds* are flat, with a narrow, membranous, deciduous border at one side, as well as at the summit, of each.

The late Mr. Crowe, whose remarks were always worthy of attention, and to whom we owe so much for his unrivalled discrimination of Willows, observed that the *petals* of our wild *Cheiranthus* merely become recurved as they advance towards decay, and do not hang loosely flaccid, like those of the true *Ch. Cheiri*, or Blood Wall-flower of the gardens. There is indeed a cultivated double variety of *Ch. fruticosus*, always with plain yellow *flowers*, and though more luxuriant than the wild plant, still unlike the *Ch. Cheiri*. Dr. Hooker appears to me quite correct in his *Fl. Scot.*, except a slip of the pen, *leaves* for *petals*; but I quote his *Fl. Lond.* and its luminous dissections, with hesitation, on account of the strongly-ribbed valves of the short *Pods*, and the almost total want of a *style*, such as I have never seen in any Wall-flower. *Ch. Cheiri* and its supposed varieties enumerated by DeCandolle, require more correct examination than they have, as yet, received. I do not presume to give a decisive opinion concerning them, but merely describe what I have seen, depending with implicit confidence on my friend Hooker for the accuracy of his representations. *Viola lutea*, *Fuchs. Hist.* 458, *f.*, comes nearest to his plate and description.

338. MATTHIOLA. Stock.

Br. in *Ait. H. Kew.* v. 4. 119. *DeCand. Syst.* v. 2. 162. *Comp. ed.* 4. 108.

Cal. converging, a little compressed; leaves linear-oblong, concave, erect, deciduous, 2 opposite ones protuberant at the base. *Pct.* obovate, spreading, entire, or with a broad

shallow notch; claws erect, the length of the calyx. *Filam.* awl-shaped, simple, distinct; 2 outermost much the shortest, embraced at the bottom by a nectariferous gland. *Anth.* oblong-arrow-shaped, nearly erect, of 2 linear lobes. *Germ.* oblong, rather compressed, shorter than the stamens. *Style* short and thick, or more frequently wanting. *Stigma* of 2 converging lobes, either thickened or protuberant at the back, permanent. *Pod* linear, compressed, or nearly cylindrical, convex or keeled at one or both sides; valves straight; partition membranous. *Seeds* ranged alternately in a single row, orbicular, compressed, generally encompassed by a membranous border; cotyledons flat, accumbent.

Herbaceous or shrubby, almost always hoary, with starry pubescence, occasionally intermixed with stalked glands. *Leaves* oblong, undivided, toothed, or sinuated. *Fl.* fragrant, especially in an evening, their colours purple, white, greenish, or brownish. Mr. Brown remarks that when the lobes of the *stigma* are thickened at the back, the *cotyledons* are incumbent. Prof. DeCandolle on the contrary declares that he never met with incumbent *cotyledons* in any species examined by him. In our native ones they are certainly accumbent.—I beg leave to observe that the name of the botanist here commemorated is Matthiolus, not Mathiolus.

1. *M. incana*. Hoary Shrubby Stock.

Stem shrubby, upright, branched. Leaves lanceolate, obtuse, entire, hoary. Pods without glands.

M. incana. *Br. in Ait. H. Kew. v. 4. 119. DeCand. Syst. v. 2. 163. Comp. ed. 4. 113.*

Cheiranthus incanus. *Linn. Sp. Pl. 924. Willd. v. 3. 520. Engl. Bot. v. 27. t. 1935. Mill. Illustr. t. 55.*

Leucojum incanum majus. *Moris. v. 2. 240. sect. 3. t. 8. f. 1.*

L. purpureum. *Matth. Valgr. v. 2. 228. f. Camer. Epit. 619. f. Ger. Em. 458. f. Dalech. Hist. 802. f.*

Viola matronalis purpurea. *Fuchs. Hist. 315. f.*

On maritime cliffs in the south of England.

Upon rocky cliffs to the east of Hastings, Sussex. *Mr. D. Turner and Mr. W. Borrer.*

Shrub. *May, June.*

Root much branched downwards; simple at the crown. *Stem* erect, bushy, round, leafy, hoary, about 2 feet high. *Leaves* scattered, 2 inches or more in length, covered on both sides with dense, starry, hoary pubescence, single-ribbed, entire, thick and

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leathery ; rounded at the extremity ; each tapering at the base into a short *footstalk*. *Fl.* corymbose, large, light purple, fragrant, often double ; their claws pale and greenish. *Pod* 2 or $2\frac{1}{2}$ inches long, crowned with the sessile *stigma* subtended at each side by a small point ; the valves frequently dissimilar, one being more keeled than the other. *Seeds* most convex at one side, light brown, surrounded entirely by a white filmy border ; cotyledons accumbent, as may be seen without taking off the skin.

I believe this species is naturally perennial ; though in gardens, remote from the sea, it is seldom more than biennial, and indeed often perishes the first winter, without flowering.

2.* *M. sinuata*. Great Sea Stock.

Stem herbaceous, spreading. Leaves downy, glandular. obtuse, sinuated ; those of the branches undivided. Pods rough with prominent glands.

M. sinuata. *Br. in Ait. H. Kew. v. 4. 120. DeCand. Syst. v. 2. 167. Comp. ed. 4. 113.*

Cheiranthus sinuatus. *Linn. Sp. Pl. 926. Willd. v. 3. 524. Fl. Br. 710. Engl. Bot. v. 7. t. 462. Huds. 288. Davies Welsh Botanol. 64.*

Ch. tricuspidatus. *Huds. ed. 1. 250.*

Leucojum marinum majus. *Raii Syn. 291.*

L. marinum purpureum Lobelii. *Ger. Em. 460. f.*

L. maritimum magnum latifolium. *Bauh. Hist. v. 2. 875. f. 876. Chabr. Ic. 279. f. 4.*

On the sandy sea coasts of Wales and Cornwall.

In many parts of Wales ; also on the coast of Cornwall. *Ray*. Near Pembroke. *Mr. Adams*. Near Abermeney ; *Llwyd* ; within a mile of Llanddwyn ; *Brewer's Ms.* ; *Rev. H. Davies*.

Biennial. *August*.

Root long and tapering. Whole herb clothed with densely intricate starry down, intermixed with short glandular rigid prickles, which abound most on the pods. *Stem* branched, widely spreading, 2 feet high, round, leafy. Lower leaves most sinuated ; upper undivided and entire. *Fl.* the size of the foregoing, but of a more dingy hue ; not fragrant by day, but in the evening very highly scented, with a kind of aromatic pungency, rendering this species well worthy of a place in gardens. *Stigma* sessile, bluntly protuberant at each side. *Pods* 3 or 4 inches long, convex at each side, all over hoary and glandular. *Seeds* with a membranous border. The taste of the whole herb is alkaline and bitterish. Petiver has by mistake copied, for this, the excellent wooden cut of *Matthiola tricuspidata*, *Cheiranthus tricuspidatus* of Linnæus, published in the *Hortus Medicus* of Camerarius, f. 24. His error might perhaps mislead Mr. Hudson in the first edition of *Fl. Anglica*.

339. HESPERIS. Dame's-violet.

Linn. Gen. 340. *Juss.* 238. *Fl. Br.* 711. *Comp. ed.* 4. 108. *Br. in Ait. H. Kew.* v. 4. 122. *DeCand. Syst.* v. 2. 446. *Tourn. t.* 108. *Lam. t.* 564. *f.* 1.

Cal. closely converging; leaves lanceolate-oblong, obtuse, overlaying each other at the upper part, separating first at the bottom, deciduous; 2 opposite ones protuberant at the base. *Pet.* obovate, obtuse, or slightly notched, obliquely spreading; claws linear, channelled, erect, the length of the calyx. *Filam.* thread-shaped, erect, simple, unconnected; the 2 shorter with a gland at their base internally. *Anth.* linear, recurved. *Germ.* quadrangular, linear, the length of the calyx. *Style* scarcely any. *Stigma* nearly sessile, of 2 closely converging, erect, simple, obtuse, downy lobes, permanent, unchanged. *Pod* linear, more or less accurately quadrangular, striated, protuberant from the seeds; valves linear, undulated, acute, the length of the membranous partition. *Seeds* in a single row, pendulous, oblong, obscurely triangular, not bordered; cotyledons flat, incumbent.

Herbaceous, with fibrous roots. *Stem* round, erect or spreading, downy or smooth. *Leaves* ovate-lanceolate, toothed, finely hairy, rarely entire; in some sinuated, or runcinate. *Pubescence* generally scattered and simple; partly forked and glandular. *Fl.* corymbose, purplish, white, or brownish; powerfully scented, for the most part, in an evening. *Pods* long and slender.

1. *H. matronalis*. Common Dame's-violet.

Partial flower-stalks the length of the calyx. Leaves ovate-lanceolate, toothed. Stem upright, slightly branched. Pods smooth, irregularly tumid, equilateral, nearly erect.

H. matronalis. *Linn. Sp. Pl.* 927. *Willd. v.* 3. 531. *Br. in Ait. H. Kew.* v. 4. 122. *DeCand. Syst.* v. 2. 450. *Hook. Scot.* 202.

H. inodora. *Linn. Sp. Pl.* 927. *Willd. v.* 3. 531. *Huds.* 288. *With.* 586. *Fl. Br.* 711. *Comp. ed.* 4. 113. *Engl. Bot. v.* 11. *t.* 731. *Fl. Dan. t.* 924. *Jacq. Austr. t.* 347.

H. n. 448. *Hall. Hist. v.* 1. 195.

H. sylvestris inodora. *Dill. in Raii Syn.* 293. *Rupp. Jen. ed. Hall.* 78. *t.* 1.

H. pannonica inodora. *Bauh. Hist. v.* 2. 878. *f.*

H. tertia. *Clus. Hist. v.* 1. 297. *f.*

H. altera pannonica, inodora sylvestris. *Clus. Pann.* 335. *f.* 336.

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Viola matronalis. *Dod. Pempt.* 161. *f.* *Ger. Em.* 452. *f.* *Lob. Ic.* 323. *f.*

V. purpurea. *Fuchs. Hist.* 459. *f.*

In hilly pastures, especially near rivulets, but rare.

On the banks of the rivulets about Dale-head, Cumberland, and Grassmere, Westmoreland; Mr. Nicholson. *Dillenius*. About Falmouth. *Withering*. Near Cheltenham, on Cotswould ridge. *General Hardwicke*. From which neighbourhood it was sent by the late Earl of Dartmouth, to Mr. Sowerby. See *Engl. Bot.* Near the old castle of Airly, Angus-shire. *Mr. J. Mackay and Mr. G. Don*.

Perennial. *May, June*.

Root tufted, of many long fibres. *Stems* erect, 2 or 3 feet high, slightly branched, leafy, round, solid, clothed, more or less copiously, with very short, deflexed, simple or forked, minute hairs. *Leaves* scattered, ovate-lanceolate, or slightly heart-shaped, taper-pointed, veiny, single-ribbed, bordered with numerous, unequal, prominent, obtuse, somewhat glandular teeth; all nearly or quite sessile, except some of the lowermost. *Fl.* terminal, corymbose, numerous, rather large and handsome, pale purple, or white, perpetually varying from seed in this respect; by day they have little or no smell, except in rainy weather, but in an evening they are highly and delightfully fragrant. *Cal.* tinged with purple, rough with coarse spreading hairs, especially in the upper part; seldom quite naked. *Pet.* abrupt, wavy, notched, sometimes having a small terminal tooth. *Pod* 2 inches long, ascending, or erect, a little curved, acute, of a slender cylindrical form, usually quite smooth, with 4 simple, not bordered, angles, whose somewhat striated interstices are equal, except the very irregular swellings and undulations caused by the numerous seeds, which are elliptical, concave at one side, destitute of a border.

Few British plants have been enveloped in more uncertainty than this, owing to the epithet *inodora*, which, as botanists generally hunt by daylight, was found applicable to our wild *Hesperis*; while the well-known rich nocturnal fragrance of the garden plant, dedicated in its name for that very reason, to the evening star, was supposed to render the latter specifically distinct. This opinion was confirmed in the mind of Linnæus by a specimen from Jacquin, marked *Hesperis tertia Clusii*, in which the lower teeth of the rather softer leaves are peculiarly dilated, as in Jacquin's plate above indicated. Hence Linnæus, giving credit to the want of scent, plumed himself on establishing a specific difference. But the characters he gives have all long been found illusive, and Mr. Brown has justly, in my opinion, united these two Linnæan species, without marking either as even a variety. We therefore retain the original, and least exceptionable, specific name.

It is said that *H. matronalis*, originally brought by European settlers to the United States of America, loses its scent the second season, and is obliged to be renewed by fresh seeds from Europe. See the remark under *Æthusa*, v. 2. 65.

340. ARABIS. Wall-cress, or Rock-cress.

Linn. Gen. 341. *Juss.* 238. *Fl. Br.* 711. *Comp. ed.* 4. 108. *Br. in Ait. H. Kew.* v. 4. 104. *DeCand. Syst.* v. 2. 213. *Lam. t.* 563. *f.* 1—3.

Cal. erect; leaves ovate-oblong, converging, deciduous; 2 opposite ones rather the largest, somewhat protuberant at the base. *Pet.* obovate-oblong, undivided, a little spreading, tapering at the base into broadish claws, hardly so long as the calyx. *Filam.* thread-shaped, erect, simple, unconnected, usually with 4 glands at their base externally. *Anth.* roundish-heart-shaped, incumbent. *Germ.* linear, about the length of the stamens. *Style* very short, or none. *Stigma* obtuse, simple. *Pod* linear, compressed, crowned with the permanent stigma; valves almost flat, ribbed, or veiny, slightly undulated from the protuberance of the seeds, quite as long as the linear membranous partition. *Seeds* in a single row, pendulous, oval or orbicular, compressed, with or without a border; cotyledons flat, accumbent.

Annual or perennial, leafy, upright *herbs*. *Leaves* simple; entire or toothed; the radical ones numerous, in a rose-like tuft, mostly stalked; those of the stem alternate, sessile, or clasping, and smaller. *Pubescence* simple or forked. *Fl.* in corymbose clusters, white, seldom reddish. *Pods* in very long clusters. Species numerous, chiefly natives of the northern hemisphere.

1. *A. thaliana*. Common Wall-cress.

Leaves hairy, more or less toothed; radical ones stalked, oblong. Stamens not much shorter than the petals. Stem branched. Pods pointing upwards.

A. thaliana. *Linn. Sp. Pl.* 929. *Willd.* v. 3. 535. *Fl. Br.* 712. *Engl. Bot.* v. 13. t. 901. *Curt. Lond. fasc.* 2. t. 49. *Hook. Scot.* 199. *DeCand. Syst.* v. 2. 226. *Pollich* v. 2. 243. t. 4. *Fl. Dan.* t. 1106.

A. n. 452, *α.* *Hall. Hist.* v. 1. 197.

Pilosella siliquata. *Thal. Hercyn.* 84. t. 7. f. D.

Turritis vulgaris ramosa. *Tourn. Inst.* 224. *Raii Syn.* 294. *Lind. Alsat.* 36. t. 1.

Bursa pastoris, sive *Pilosella siliquosa*. *Bauh. Hist.* v. 2. 870. f.

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Draba silikouosa similis planta præcox annua. Moris. v. 2. 235. sect. 3. t. 7. f. 5.

Aizoon Telephium. *Dalech. Hist.* 1131. f.

Thale Cress. *Petiv. H. Brit. t. 48. f. 1.*

β . *Turritis minor foliosa. Raii Syn.* 294.

Brassica spuria minima, caule magis folioso hirsutior. Raii Syn. ed. 1. 241. ed. 2. 166.

B. spuria exilis, non laciniata, caule magis folioso hirsutior, foliis subrotundis. Pluk. Phyt. t. 80. f. 2.

Broad Thale Cress. *Petiv. H. Brit. t. 48. f. 2.*

On walls, dry banks, cottage roofs, and dry sandy ground, every where.

Annual. *April.*

Root tapering, fibrous. *Herb* varying greatly in luxuriance, upright, simple or branched, hairy, light green, from 3 to 12 inches high. *Leaves* various in shape and size, lanceolate, ovate, or obovate, entire or unequally notched, their pubescence short, mostly forked; radical ones close to the ground, numerous, stalked; the rest smaller, few and scattered, sometimes linear-lanceolate. *Fl.* small, white, corymbose, on slender stalks. *Cal.* generally a little bristly in the upper part. *Pet.* twice as long, nearly upright. *Glands* minute, and inconstant, curved, but scarcely protruding between the calyx-leaves. *Pods* ascending, on spreading stalks, slender, somewhat curved, smooth, hardly an inch long.

Plukenet's and Petiver's figures of the variety β are very dissimilar, but specimens may be found answering to either, nor are any of the varieties at all constant. The whole plant has a warm pungent flavour, like the rest of its class.

2. *A. stricta*. Bristol Rock-cress.

Leaves toothed, obtuse, bristly; radical ones somewhat lyrate. Stems hairy. Petals nearly erect. Calyx smooth.

A. stricta. Huds. 292. *Fl. Br.* 712. *Engl. Bot. v. 9. t. 614. Velley Pl. Marit. t. 5. Shiercliff, Bristol Guide, 83. f. Hook. Lond. t. 4. DeCand. Syst. v. 2. 224. Willd. Sp. Pl. v. 3. 539.*

A. hispida. Ait. H. Kew. ed. 1. v. 2. 400; not of Linnæus.

A. n. 453. Hall. Hist. v. 1. 197. Nomencl. 42.

Turritis Raii. Villars Dauph. v. 3. 326. t. 38.

Hesperis alpina minor, flore albo, siliquis longis. Raii Syllog. 296. I have it from Mount Salève.

Cardamine pumila, bellidis folio, alpina. Raii Syn. ed. 2. 172. ed. 3. 300? but not of Gerarde, whose wooden cut, copied by Petiver, H. Brit. t. 47. f. 9, really belongs to Arabis pumila of Jacquin, A. nutans, Willd. v. 3. 537.

On limestone rocks in the south-west part of England.

On St. Vincent's rocks near Bristol. *Huds. Velley.* On the south

side of the Avon, about a mile below the hot-wells, but sparingly. *Mr. W. Clayfield and Mr. Dyer.* I have also seen it on the fine turf just below the hot-wells.

Perennial. *May.*

Root simply tufted, very long, tapering and fibrous, not creeping, certainly perennial. *Stems* for the most part several, erect, or ascending, from 3 to 6 inches high, round, leafy; the central one usually branched; all rough in the lower part with mostly simple, spreading or deflexed, bristly hairs. *Radical leaves* numerous, obtuse, dark green, purplish underneath, deeply toothed or sinuated in a lyrate manner, rough with simple, rarely forked, rigid hairs; *stem-leaves* scattered, smaller, and more entire, coarsely and sparingly fringed. *Fl.* few, corymbose, erect, cream-coloured, rather large, their *petals* upright. *Cal.* smooth, reddish, scarcely if at all spreading. *Pods* slender, erect, straight, smooth, slightly corrugated, on short smooth *stalks*, of which some of the lowermost are accompanied by small linear *leaves*, looking like *bracteas*, but not properly such.

3. *A. hispida.* Alpine Rock-cress.

Radical leaves lyrate or hastate, smooth or bristly, tufted; *stem-leaves* lanceolate, entire, scattered, mostly smooth. *Petals* spreading. *Root* branched at the crown.

A. hispida. *Linn. Suppl.* 298. *Willd. Sp. Pl.* v. 3. 538. *Fl. Br.* 713.

Comp. ed. 4. 113. *Br. in Ait. H. Kew.* v. 4. 106. *Hook. Scot.* 199.

A. petræa, α , β , γ . *DeCand. Syst.* v. 2. 229, 230.

A. thaliana. *Crantz Austr. fasc.* 1. 41. t. 3. f. 2.

A. crantziana. *Ehrh. Herb.* 78. *Willd. Sp. Pl.* v. 3. 535.

Sisymbrium arenosum. *Linn. Fl. Suec. ed.* 2. 233; not of *Sp. Pl.*

Cardamine petræa. *Huds.* 293. *With.* 577. *Lightf.* 347. t. 15. f. 2. *Jacq. Enum.* 120; from the author. *Host Syn.* 367.

C. petræa cambrica, nasturtii facie. *Dill. Elth.* 70. t. 61. f. 71.

C. hastulata. *Engl. Bot.* v. 7. t. 469. *Fl. Dan.* t. 1462.

Nasturtium petræum Johnsoni. *Raii Syn. ed.* 2. 174. ed. 3. 300.

Pluk. Almag. 261. *Phyt.* t. 101. f. 3; very bad.

Welsh Rock Cress. *Petiv. H. Brit.* t. 50. f. 3.

On lofty alpine rocks of Wales and Scotland, in moist places.

First observed in various parts of North Wales, by Mr. Lhwyd, before 1696. *Ray.* Gathered in Scotland, by Mr. Lindesay, in 1728.

Perennial. *July.*

Root tapering, running deep into the ground, subdivided and tufted at the crown, not at all creeping. *Stem* one, or more, 3 or 4 inches high, erect or ascending, simple or slightly branched, round, leafy, frequently quite smooth, sometimes rough towards the base, with simple spreading hairs. *Radical leaves* numerous, about half an inch long, composing several lax tufts, slightly succulent, deep green, sometimes nearly or quite smooth, but most

frequently rough, especially on the upper side, with short, spreading, cloven or 3-forked bristly hairs; their outline more or less perfectly lyrate, sometimes merely hastate, rarely only obovate and slightly pinnatifid, always tapering at the base into a slender *footstalk*, longer than the leaf. *Stem-leaves* scattered, lanceolate, or elliptic-lanceolate, obtuse, mostly quite entire and smooth, sometimes hairy; the lower ones having now and then a lateral notch, and more or less of a *footstalk*. *Fl.* in terminal, solitary, erect, lax, corymbose, very smooth *clusters*, much elongated, and somewhat wavy, after flowering. *Cal.* smooth, slightly spreading, membranous at the margin. *Pet.* twice as long, pale purple, or white, with a horizontal, obovate, entire border. *Pods* spreading, smooth, linear, tipped with the capitate, somewhat elevated, *stigma*; their valves separating at the top and bottom, slightly recurved at each end, but not revolute; in Ehrhart's specimen they have a slender, not very prominent keel, which may also be perceived in some of my British ones, though not so far advanced. *Seeds* disposed in a simple row.

The suggestions of my learned friend DeCandolle have induced me to be very particular in my description, and to examine carefully how far the real Linnæan *Cardamine petræa* differs from our plant. In the *flowers* and *Pods* I can find no discriminating character, but the *leaves* of that *Cardamine*, to which Linnæus has misapplied synonyms of our *Arabis*, are truly, as he defines them, "oblong and toothed," at least the radical ones; being rather linear-lanceolate, or partly obovate, with numerous, regular, equal, blunt, prominent teeth, and by no means approaching to a lyrate, much less a hastate, form; the *stem-leaves* are linear and entire; every part of the plant is perfectly smooth, and seems of a lighter green. Such is the original Swedish specimen, above 6 inches high, with which *t.* 386 of *Fl. Dan.*, though not particularly good, appears to agree tolerably well. I have another wild Swedish specimen of a smaller size, about 3 inches high, of which all the leaves are obovate and nearly entire.

The plate of Dillenius in *Hort. Elth.* is excellent. That of Loesel, *Fl. Pruss. t.* 13, represents the true *Sisymbrium arenosum*. The *leaves* in Crantz's figure, as well as in Ehrhart's specimen, are not so deeply sinuated as in my numerous British ones, but their notches are not like the teeth of *Cardamine petræa*.

4. *A. ciliata*. Fringed Rock-cress.

Leaves somewhat toothed, smooth on both sides, distantly fringed and bearded; radical ones obovate. Stem simple.

A. ciliata. *Br. in Ait. H. Kew. v.* 4. 107. *Comp. ed.* 4. 113. *Hook. Scot.* 200. *DeCand. Syst. v.* 2. 225.

Turritis ciliata. *Willd. Sp. Pl. v.* 3. 544. *Schleich. Cat.* 59.

T. alpina. *Linn. Syst. Veg. ed.* 13. 502. *Willd. Sp. Pl. v.* 3. 545. *Sm. in Rees's Cycl. v.* 36. n. 9. *Engl. Bot. v.* 25. *t.* 1746.

T. hirsutæ varietas. *Linn. Fl. Suec. ed. 2.* 236.

Tourrete ciliée. *Reynier Mem. de la Suisse, v. 1.* 171.

On cliffs near the sea, but rare.

By the sea side at Rinville, Cunnamara, in the west of Ireland.

Mr. J. T. Mackay.

Biennial. *July, August.*

Root simple, tapering. *Stem* generally solitary, from 2 to 4 inches, and when cultivated near a foot in height, erect, quite simple, leafy, round, smooth. *Radical leaves* several, in one simple tuft, various in size, obovate, often reddish; tapering at the base; *those of the stem* alternate, sessile, or half-clasping, elliptic-oblong; all somewhat glaucous, quite smooth on both sides, more or less evidently toothed, fringed with simple or forked, scattered, spreading, bristly hairs; some of which are often crowded into a small tuft or beard at the tips of the leaves, whilst others form a more regular fringe upon the taper bases, or *foot-stalks*, of the radical ones. *Fl.* in a simple, terminal, upright, smooth, corymbose cluster. *Cal.* tawny, with a white edge. *Pet.* twice its length, pure white, almost erect. *Pods* upright, slender, each tipped with the simple, obtuse stigma, supported by a very short, conical style; their valves undulated, striated, and slightly keeled.

5. *A. hirsuta*. Hairy Wall-cress.

Leaves toothed and bristly. Stem rough, with simple spreading hairs. Pods quite erect, with slightly keeled valves.

A. hirsuta. *Br. in Ait. H. Kew. v. 4.* 107. *Comp. ed.* 4. 114. *Hook. Scot.* 200. *DeCand. Syst. v. 2.* 223. *Scop. Carn. v. 2.* 30.

Turritis hirsuta. *Linn. Sp. Pl.* 930. *Willd. v. 3.* 543. *Fl. Br.* 716. *Engl. Bot. v. 9. t.* 587. *Jacq. Coll. v. 1.* 70. *Ic. Rar. t.* 126. *Fl. Dan. t.* 1040. *Dicks. H. Sicc. fasc.* 9. 8.

T. n. 456. *Hall. Hist. v. 1.* 198.

T. muralis minor. *Raii Syn.* 294.

Erysimum minimum annuum hirsutum. *Moris. v. 2.* 219. *sect. 3. t. 3. f.* 5.

Erysimo similis hirsuta non laciniata alba. *Bauh. Pin.* 101. *Prodr.* 42. *f.*

Barbaræa muralis. *Bauh. Hist. v. 2.* 869.

Daisy Tower Mustard. *Petiv. H. Brit. t.* 47. *f.* 12.

On old walls, stony banks, or rocks.

In the north and west of England. *Ray. Sussex. Doody.* In Switham bottom, near Croydon. *Huds.* On the walls of Lakenham church-yard, near Norwich. *Mr. Crowe.* Near Bury. *Mr. Matthew.* Upon rocks in Scotland. *Dickson.* Frequent on dry rocks in Scotland. *Hooker.*

Perennial. *May.*

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Root strong and woody. *Stems* several, about a foot high, upright, leafy, clothed with thick-set, spreading, or partly deflexed hairs; branched, and less hairy, at the top. *Leaves* bluntish, variously toothed, more or less rough, with short, bristly, simple or forked, prominent hairs; the *radical* ones largest, obovate, tapering at the base; *stem-leaves* numerous, sessile, ovate-oblong. *Fl.* small, white. *Cal.* smooth, purplish. *Pet.* moderately spreading. *Stigma* sessile. *Pods* forming very long, close, smooth *clusters*, erect, slender, smooth; valves with a slight keel half way up, undulated from the alternate projection of the *seeds*, which are in a single row, not a double one like *Turritis*. This last character, confirmed by a similitude of habit, is admirably chosen by Mr. Brown to define the genus *Arabis*, in contradistinction to *Turritis*, whose much more numerous seeds are disposed in double rows.

6. *A. Turrita*. Tower Wall-cress.

Leaves toothed, clasping the stem. Flower-stalks the length of the calyx, each with a leafy bractea. Pods linear, flat, thick-edged, recurved in one direction.

A. Turrita. *Linn. Sp. Pl.* 930. *Willd. v. 3.* 541. *Fl. Br.* 714. *Engl. Bot. v. 3. t. 178.* *Sibth.* 205. *Hook. Lond. t. 176.* *Scot.* 200. *Jacq. Enum.* 118. *Austr. t. 11.* *DeCand. Syst. v. 2.* 235.

A. umbrosa. *Crantz Austr. fasc. 1.* 43; not 41, as in *Jacq.*, nor 39, as in *DeCand.* after *Willdenow*, nor *t. 3. f. 2*, as in the latter.

Leucojum n. 444. *Hall. Hist. v. 1.* 193; but not *Fl. Dan. t. 62.*

Turrita major Plateau. *Clus. Hist. v. 2.* 126. *f.*

Turritis major. *Ger. Em.* 272. *f.*

Hesperidi alpinæ muriariæve similis surrecta et magna. *Bauh. Hist. v. 2.* 881. *f.*

Brassica sylvestris, albido flore, nutante siliquâ. *Bocc. Mus.* 81. *t. 72.* *Barrel. Ic. t. 353.*

Great Tower Mustard. *Petiv. H. Brit. t. 47. f. 11.*

On old walls, very rare.

On the walls of Trinity and St. John's colleges, Cambridge. *Prof. Martyn.* On Magdalen college walls, Oxford. *Sibth.* On the castle of Cliesh, Kinross-shire; Mr. Arnott. *Hook.*

Biennial. *May.*

Root tapering, simple. *Herb* light green, more or less densely downy all over with fine, short, soft, starry hairs. *Stem* a foot or more in height, simple, erect, leafy. *Leaves* obovate, broad, toothed, rather acute, but not pointed; the radical ones tapering downward into *footstalks*; the rest heart-shaped at the base, clasping the stem; the uppermost gradually diminished into oblong *bracteas*, each accompanying one of the short *flower-stalks*. *Cluster* corymbose, nearly or quite simple. *Fl.* pale sulphur-coloured. *Pet.* with a spreading border. *Glands* 2 at the inside of the shorter stamens, and 2 at the outside of the longer. *Style*

very short, with a small, not dilated, *stigma*. *Pods* very long, flat, striated, thickened at the edges, curved downwards as they ripen, chiefly towards one side; their valves slightly undulated, not at all keeled.

All the difficulty about the genus of this plant, mentioned in *Engl. Bot.* is now happily removed on Mr. Brown's principles. Its glands indeed "are those of a *Brassica*," but the flat accumbent *cotyledons*, and simple row of *seeds*, settle the point. The habit confirms the generic characters, which are altogether those of an *Arabis*. *A. pendula*, confounded by Haller with this species, is perfectly distinct.

341. TURRITIS. Tower-mustard.

Linn. Gen. 341. *Juss.* 238. *Fl. Br.* 715. *Comp. ed.* 4. 108. *Br. in Ait. H. Kew.* v. 4. 108. *DeCand. Syst.* v. 2. 211. *Gartn. t.* 143. *Arabis. Lam. t.* 563. f. 4.

Cal. erect; leaves oblong, converging, deciduous; 2 opposite ones very slightly protuberant at the base. *Pet.* obovate-oblong, undivided, erect, not twice the length of the calyx. *Filam.* thread-shaped, simple, erect, unconnected. *Anth.* oblong, incumbent. *Germ.* linear, the length of the petals. *Style* very short. *Stigma* obtuse, simple. *Pod* linear, compressed, very long and slender, crowned with the permanent stigma; valves straight, flat, each with a prominent keel, and quite as long as the linear membranous partition. *Seeds* very numerous, disposed in a double row in each cell, crowded, obliquely pendulous, ovate, compressed, slightly bordered; *cotyledons* flat, accumbent.

Upright *herbs*, partly rough, nearly agreeing in habit with the last genus; nor could any satisfactory mark of distinction between *Arabis* and *Turritis* be discovered, till Mr. Brown adverted to the double rows of *seeds* in the latter, which afford a very peculiar character. Some of his species are thrown out by M. DeCandolle, but they do not concern the Flora of Britain.

1. *T. glabra*. Smooth Tower-mustard.

Radical leaves toothed, rough; the rest entire, clasping the stem, smooth.

T. glabra. Linn. Sp. Pl. 930. *Willd. v.* 3. 542. *Fl. Br.* 715. *Engl. Bot. v.* 11. t. 777. *Curt. Lond. fasc.* 4. t. 47. *Hook. Scot.* 200. *DeCand. Syst. v.* 2. 211. *Fl. Dan. t.* 809. *Ehrh. Herb.* 149.

T. n. 455. *Hall. Hist. v.* 1. 198.

Turritis. Raii Syn. 293. *Ger. Em.* 272. f. *Lob. Ic.* 220. f.

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Turrita vulgarior. *Clus. Hist. v. 2. 126. f.*

Sinapi album. *Dalech. Hist. 1168. f.*

Brassica silvestris foliis circa radicem cichoraceis asperis, caulibus autem adhærentibus planis seu glabris. *Moris. v. 2. 210. sect. 3. t. 2. f. 22.*

Tower Mustard. *Petiv. H. Brit. t. 47. f. 10.*

On banks and by road sides, in a dry gravelly soil.

In many parts of Norfolk, as well as other counties. Rare in Scotland.

Annual. *May, June.*

Root tapering. *Stem* 2 or 3 feet high, erect, wand-like, simple, smooth, except at the bottom, round, leafy. *Radical leaves* numerous, spreading, toothed, or sinuated, so as to be almost lyrate, rough on both sides with rigid, forked or simple, hairs; *stem-leaves* numerous, upright, oblong-arrow-shaped, entire, glaucous, quite smooth, clasping the stem, but not perfoliate as some writers have denominated them. *Fl.* numerous, closely corymbose, pale sulphur-coloured. *Pods* very long and slender, smooth and even, erect, close to the stem, on short stalks. *Seeds* about 60 in each cell, very small.

342. BRASSICA. Cabbage, Turnip, &c.

Linn. Gen. 342. Juss. 238. Fl. Br. 717. Comp. ed. 4. 108. Br. in Ait. H. Kew. v. 4. 123. DeCand. Syst. v. 2. 582. Tourn. t. 106. Lam. t. 565. Gærtn. t. 143.

Rapa. Tourn. t. 113.

Cal. equally protuberant at the base; leaves oblong, concave, converging in their lower part, spreading in the upper, deciduous. *Pet.* obovate, spreading, undivided; their claws erect, channelled. *Filam.* awl-shaped, simple, erect. *Anth.* oblong, nearly erect, a little recurved. *Glands* 4; 2 at the inside of the shorter filaments, 2 at the outside of the longer. *Germ.* cylindrical, the length of the longest stamens. *Style* tapering, making a beak to the pod. *Stigma* capitate, entire. *Pod* nearly cylindrical, beaked, of 2 concave valves, and 2 longitudinal cells, besides 1 in the beak, which is often barren. *Seeds* in a single row, nearly globular, with one or more occasionally in the beak; cotyledons folded, incumbent, their doubled edges meeting the radicle.

A numerous genus, for the most part biennial; the *stem*, or body of the *root*, occasionally very fleshy. *Leaves* somewhat succulent, smooth or rough; the radical ones mostly stalked, lyrate, or pinnatifid; upper more simple or entire, clasping at the base. *Fl.* in long clusters, yellow, rarely white.

1. *B. Napus*. Rape, or Cole-seed.

Root spindle-shaped. Leaves smooth; upper ones lanceolate, heart-shaped at their base, clasping the stem; lower ones lyrate, toothed.

B. Napus. *Linn. Sp. Pl.* 931. *Willd. v. 3.* 547. *Fl. Br.* 719. *Engl. Bot. v. 30. t.* 2146. *Mart. Rust. t.* 103. *Hook. Scot.* 203. *De-Cand. Syst. v. 2.* 592.

B. sylvestris. *Dod. Pempt.* 626. *f. ?* *Ger. Em.* 316. *f. ?*

Napus sylvestris. *Bauh. Pin.* 95. *Bauh. Hist. v. 2.* 843. *f. Moris. v. 2.* 214. *sect. 3. t. 2. f. 2*; but not of Ray.

N. Bunias sylvestris. *Fuchs. Hist.* 177. *f.*

Bunias sylvestris. *Lob. Ic.* 200. *f.* *Ger. Em.* 235. *f.*

Rapum sylvestre non bulbosum. *Lob. Adv.* 66 ? *Raii Syn.* 295, *obs. ?*

β . *Napus*. *Trag. Hist.* 730. *f.* *Matth. Valgr. v. 1.* 398. *f.* *Camer. Epit.* 222. *f.* *Dod. Pempt.* 674. *f.*

N. sativus. *Dalech. Hist.* 644. *f.* *Moris. v. 2.* 214. *sect. 3. t. 2. f. 1.*

N. Bunias sativus. *Fuchs. Hist.* 176. *f.*

Bunias. *Ger. Em.* 235. *f.* *Lob. Ic.* 200. *f.*

In corn fields, waste ground, and on ditch banks.

Biennial. *May*.

Root spindle-shaped, more or less tumid under the crown, and in the variety β considerably large and fleshy, either white or yellowish, more used in French cookery than with us. *Stem* erect, branched, spreading, leafy, striated, $1\frac{1}{2}$ or 2 feet high. *Leaves* all smooth, most glaucous beneath; radical ones lyrate, usually disappearing before the plant blossoms; those of the stem numerous, the uppermost lanceolate and entire, lower ones gradually broader, blunter, and more toothed, as they approach the root, but all clasping, dilated and rounded at their insertion. *Fl.* bright yellow, smaller than in the following species. *Cal.* somewhat coloured; the upper half spreading. *Pods* on slender spreading stalks, at length often deflexed, round, with a beaded appearance from the projection of the seeds; the beak angular, barren.

Cultivated in England chiefly for the sake of the abundant expressed oil of the seeds, the cake which remains serving for manure.

2. *B. Rapa*. Common Turnip.

Root stem-like, fleshy, orbicular, depressed. Radical leaves lyrate, rough; those of the stem smooth; the uppermost entire.

B. Rapa. *Linn. Sp. Pl.* 931. *Willd. v. 3.* 548. *Fl. Br.* 720. *Engl. Bot. v. 31. t.* 2176. *Mart. Rust. t.* 49, 50. *Hook. Scot.* 203. *De-Cand. Syst. v. 2.* 590.

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Rapa sativa rotunda. *Bauh. Pin.* 89. *Raii Syn.* 294. *Moris. v.* 2. 213. *sect.* 3. *t.* 2. *f.* 1.

Rapum. *Trag. Hist.* 728. *f.* *Dod. Pempt.* 673. *f.* *Camer. Epit.* 218. *f.*

R. sativum. *Fuchs. Hist.* 212. *f.*

R. rotundum. *Matth. Valgr. v.* 1. 394. *f.*

R. majus. *Ger. Em.* 232. *f.*

Round Turnep. *Petiv. H. Brit. t.* 45. *f.* 7.

β. Rapa sativa oblonga, seu fœmina. *Bauh. Pin.* 90. *Raii Syn.* 294. *Moris. v.* 2. 213. *sect.* 3. *t.* 2. *f.* 2.

Rapum longum. *Matth. Valgr. v.* 1. 395. *f.* *Camer. Epit.* 219. *f.*

R. radice oblonga. *Ger. Em.* 232. *f.*

Long Turnep. *Petiv. H. Brit. t.* 45. *f.* 8.

In cultivated fields and their borders, more or less completely naturalized.

Biennial. *April.*

Root orbicular, mostly depressed, in β oblong; always succulent, white, or tinged with purple, varying greatly in size, according to the soil; tapering and fibrous at the base. Stem erect, 2 feet high, branched, leafy, round, very smooth. Radical leaves abundant the first season, withering as the stem arises, lyrate, jagged, large, dark green, veiny, rough with small sharp bristly hairs; those on the lower part of the stem more simple, smoother, clasping at the base; upper ones small, glaucous, quite smooth and entire. Fl. yellow, larger than the preceding, in numerous corymbose tufts. Cal. spreading considerably in the upper part, though not at the base. Pet. rounded. Pod cylindrical, veiny, smooth, with a tapering barren beak.

The Swedish Turnip, not wild in Britain, is surely a distinct species from this and the following, as Mr. Knight has proved it to be from *B. oleracea*. Both these turnips are well known for their agricultural uses, and are acceptable at table, if not grown in a rank or manured soil.

3. *B. campestris*. Common Wild Navew.

Root tapering. Radical leaves lyrate, rough; stem-leaves smooth, clasping, oblong, partly pinnatifid; all somewhat glaucous.

B. campestris. *Linn. Sp. Pl.* 931. *Willd.* 3. 546. *Fl. Br.* 718. *Engl. Bot. v.* 32. *t.* 2234. *Hook. Scot.* 203. *DeCand. Syst. v.* 2. 588. A. *Scholl. Barb.* 153.

Napus sylvestris. *Raii Syn. ed.* 2. 167. *ed.* 3. 295; but not of Bauhin or Morison.

Wild Navew. *Petiv. H. Brit. t.* 45. *f.* 9; copied from Lobel's cut of *B. Napus*.

In corn fields and about the banks of ditches. *Ray.*

Abundant by the sides of rivers, marsh ditches, &c. *Mr. E. Forster.*

Annual. *June, July.*

Root tapering. *Stem* erect, 2 feet high, leafy, branched, glaucous ; rough in the lower part with small, bulbous, spreading bristles ; smooth upwards. *Radical leaves* lyrate, toothed and jagged, rather glaucous, rough all over with minute bristly hairs ; *those of the stem* oblong, clasping at the base, the uppermost heart-shaped, pointed, glaucous and entire. *Fl.* yellow, corymbose, almost as large as those of the Turnip. *Cal.* spreading, except at the bottom. *Pods* on longish stalks, ascending, light brown, smooth, $1\frac{1}{2}$ inch long, nearly cylindrical ; valves keeled, ribbed, veiny ; beak one-third of an inch in length, barren, tapering, furrowed, tipped with the blunt permanent *stigma*. *Seeds* brown, globose.

Most botanists, both British and foreign, have found a difficulty in distinguishing this plant from *B. Napus*, and the confusion of their synonyms is inextricable. *B. campestris* is perhaps the most certainly wild of all our three species now described, nor can there be a doubt concerning it, if the plate in *Engl. Bot.* and the above description be attended to. Hudson mistook for this a yellow variety of our *Erysimum orientale*, which is figured for it in *Fl. Dan. t.* 550. The synonyms of Fuchsius and J. Bauhin, cited with doubt in *Fl. Br.*, possibly belong to *B. Napus*.

4. *B. oleracea*. Sea Cabbage.

Root stem-like, cylindrical, fleshy. *Leaves* glaucous, waved, lobed, partly lyrate, all perfectly smooth. *Pod* without a beak.

B. oleracea. *Linn. Sp. Pl.* 932 α . *Willd. v.* 3. 548. *Fl. Br.* 720. *Engl. Bot. v.* 9. *t.* 637. *Hook. Scot.* 203. *Freeman Ic. t.* 4, 5. *Dicks. H. Sicc. fasc.* 17. 14. *DeCand. Syst. v.* 2. 583 A.

B. maritima arborea, seu procerior, ramosa. *Raii Syn.* 293. *Morris. v.* 2. 208. *n.* 15.

Sea Colewort. *Petiv. H. Brit. t.* 45. *f.* 6 ; but with a wrong figure, probably belonging to *B. Napus* ; originating with Fuchsius, *Hist.* 415, and copied by Dodonæus, Gerarde, Morison and others, under the name of *Brassica sylvestris*.

On cliffs near the sea.

On Dover cliffs, and in similar places. *Ray*. On the Welsh and Cornish coasts. *Hudson*. At Staiths, Yorkshire, abundantly. *Mr. E. Robson*. At King's Cove, Devonshire. *Mr. Sowerby*.

Biennial. *May, June.*

Root raised above the ground in the form of a *stem*, a foot or more in height, cylindrical, leafy about the top, scarred below. *Leaves* glaucous, rather fleshy, very smooth ; the lower ones large, lyrate, waved and sinuated ; upper oblong, obtuse, undivided, toothed, or nearly entire. *Fl.* in longish corymbose clusters, bright lemon-coloured, larger than any of the preceding species. *Calyx-leaves* a little spreading, but straight, close at the bottom,

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very smooth. *Pods* cylindrical, smooth, veiny, without a beak, crowned with the almost sessile *stigma*. *Seeds* large, globose. From this plant our field and garden Cabbages, with their numerous varieties, have originated.

5. *B. monensis*. Isle of Man Cabbage.

Leaves glaucous, deeply pinnatifid, nearly smooth; lobes oblong, unequally toothed. Stem simple, smooth. *Pods* quadrangular; beak lodging two or three seeds.

B. monensis. *Huds.* 291. *With.* 593. *Comp. ed.* 4. 114. *Br. in Ait. H. Kew.* v. 4. 124. *Hook. Scot.* 203. *DeCand. Syst.* v. 2. 599.

Sisymbrium monense. *Linn. Sp. Pl. ed.* 1. 658. *Fl. Br.* 704. *Engl. Bot.* v. 14. t. 962. *Lightf.* 353. t. 15. f. 1. *Davies Botanol.* 64. *Dicks. H. Sicc. fasc.* 17. 13. *Lam. t.* 565. f. 2.

Eruca monensis laciniata lutea. *Raii Syn.* 297.

E. monensis laciniata, flore luteo majore. *Dill. Elth.* 135. t. 111. f. 135.

Man Rocket. *Petiv. H. Brit. t.* 46. f. 7.

On the sandy sea coast, but not frequent.

In the Isle of Man, between the landing place at Ramsey and the town, plentifully; also on the coast of Cumberland, and in Walney island. *Ray*. In Anglesea. *Dill*. Near Abermeney ferry, Anglesea, but now very scarce. *Rev. H. Davies*. On the shore of the Mersey, near Liverpool. *Mr. Robert Roscoe*. In the isles of Bute and Arran, and several parts of the western coast of Scotland. *Lightf.* Between Dundee and Forfar. *Mr. G. Don*.

Perennial. *June, July*.

Root tapering, very long, woody, divided at the crown. *Stems* solitary from each division of the root, ascending, leafy, round, smooth, generally quite simple, 6 or 8 inches high, but when very luxuriant much taller, and sometimes branched. *Leaves* glaucous, somewhat lyrate, mostly radical, very deeply pinnatifid and jagged, their lobes extremely various in width, mostly acute, sometimes blunt; they are rather fleshy, rarely a little hairy. *Fl.* corymbose, bright lemon-coloured, veined with purple, as large as the last. *Cal.* converging, hairy at the summit. *Pods* nearly upright, large, smooth, veiny, quadrangular; beak almost half their length, tapering, ribbed, tipped with the small *stigma*, and containing the rudiments of 3 seeds, all which frequently come to perfection. The seeds are numerous in each proper cell of the pod. The herb when bruised has a pungent fetid scent.

Sisymbrium monense of the 2d edition of *Linn. Sp. Pl.* is *Diplotaxis saxatilis* of *DeCand. Syst.* v. 2. 636, and is said by the latter to be intermediate between that new genus and *Brassica*.

343. SINAPIS. Mustard.

Linn. Gen. 342. *Juss.* 238. *Fl. Br.* 721. *Comp. ed.* 4. 109. *Br. in*

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Ait. H. Kew. v. 4. 125. DeCand. Syst. v. 2. 607. Lam. t. 566. Gærtn. t. 143.

Sinapi. Tourn. t. 112.

Cal. equal, and nearly flat, at the base; leaves oblong, straight, spreading almost horizontally from the very bottom, deciduous. *Pet.* obovate, rounded, entire, or slightly notched, spreading; claws linear, erect. *Filam.* awl-shaped, simple, erect. *Anth.* oblong, slightly spreading. *Glands* 4; 2 at the inside of the shorter filaments, 2 at the outside of the longer. *Germ.* cylindrical, tapering into a very short *style*. *Stigma* capitate, rather small. *Pod* nearly cylindrical, variously beaked, of 2 concave undulated valves, and 2 longitudinal cells, besides 1 for the most part in the beak, generally barren. *Seeds* in a single row, nearly globular, with 1 occasionally in the beak; cotyledons folded, incumbent, their doubled edges meeting the radicle.

Upright, branching, annual or biennial *herbs*, often hairy or bristly. *Leaves* lyrate, or deeply cut, or toothed. *Fl.* yellow, in corymbose clusters. *Seeds* acrid. The beak of the *pod*, in some, is little else than a permanent unaltered *style*. The *seeds* in those species which constitute DeCandolle's *Diploaxis* are partially and very imperfectly two-ranked, and their *calyx* spreads much less than it ought to do, this being the chief mark of difference between *Sinapis* and *Brassica*.

1. *S. arvensis*. Wild Mustard. Charlock.

Pods with many angles, rugged, longer than their own awl-shaped beak. Leaves toothed; partly lyrate, or hastate.

S. arvensis. *Linn. Sp. Pl.* 933. *Willd. v. 3. 554. Fl. Br.* 721. *Engl. Bot. v. 25. t. 1748. Curt. Lond. fasc. 5. t. 47. Hook. Scot. 204. DeCand. Syst. v. 2. 615.*

Sinapi n. 467. *Hall. Hist. v. 1. 203.*

Rapistrum arvorum. *Raii Syn.* 295. *Ger. Em.* 233. *f. Lob. Ic.* 198. *f.*

R. flore luteo. *Bauh. Hist. v. 2. 844. f.*

Irion. *Fuchs. Hist.* 257. *f. Ic.* 143. *f.*

Lampsana vera. *Dalech. Hist.* 542. *f.*

In corn fields, a very troublesome weed; abundant in waste ground newly disturbed.

Annual. *May.*

Root small, tapering, rigid, sometimes a little tuberous, but not caulescent. *Stem* leafy, striated, often purplish, rough with sharp reflexed bristles. *Leaves* stalked, rough, variously toothed;

222 TETRADYNAMIA—SILIKUOSA. Sinapis.

partly ovate, partly lyrate or hastate; the uppermost sessile. *Calyx-leaves* linear-oblong, quite horizontal, pale, or yellowish. *Pet.* obovate, or inversely heart-shaped, bright yellow, turning white in decay. *Pods* angular, rough with reflexed bristles, and each terminating in a smoother, awl-shaped, furrowed beak, not half so long as the pod itself, compressed at the base. *Seeds* brown, serving as an inferior sort of Mustard, or rather to adulterate that made of *S. nigra*.

2. *S. alba*. White Mustard.

Pods bristly, rugged, spreading, shorter than their own flat two-edged beak. *Leaves* lyrate.

S. alba. Linn. *Sp. Pl.* 933. Willd. *v.* 3. 555. *Fl. Br.* 721. *Engl. Bot.* *v.* 24. *t.* 1677. *Curt. Lond. fasc.* 5. *t.* 46. *Mart. Rust.* *t.* 70. *Hook. Scot.* 204. *DeCand. Syst.* *v.* 2. 620. *Fl. Dan.* *t.* 1393.

Sinapi n. 466. *Hall. Hist.* *v.* 1. 203.

S. album, siliquâ hirsutâ, semine albo vel ruffo. Raii *Syn.* 295. *Bauh. Hist.* *v.* 2. 858. *f.*

S. album. Ger. *Em.* 244. *f.*

S. primum genus. Fuchs. *Hist.* 538. *f.*

S. hortense. Fuchs. *Ic.* 307. *f.*

S. secundum. Matth. *Valgr.* *v.* 1. 515. *f.* Camer. *Epit.* 333. *f.*

White Mustard. *Petiv. H. Brit.* *t.* 45. *f.* 10.

In cultivated as well as waste ground, by road sides, &c.

Annual. June.

Root tapering, small. *Stem* rough like the last, but with more slender reflexed hairs. *Leaves* bright green, almost all lyrate, toothed, roughish. *Fl.* numerous, yellow. *Calyx-leaves* linear, green, horizontal. *Pods* spreading, on nearly horizontal stalks, short, two-edged, very tumid from the prominent seeds, rough with numerous, minute, reflexed bristles, interspersed with several larger, more spreading, or upright ones; beak longer than the pod, bristly, but more sparingly, curved upwards, sword-shaped, striated, terminated by the short, compressed *style* and cloven *stigma*. *Seeds* rather few, large, pale, yellowish brown, well known as a delicate kind of Mustard. The late Mr. G. Don observed them occasionally to assume a blackish hue.

The young herb is used in salads, for which purpose chiefly it is cultivated.

3. *S. nigra*. Common Mustard.

Pods quadrangular, smooth, slightly beaked, close-pressed to the stalk. Lower leaves lyrate; upper linear-lanceolate, entire, smooth.

S. nigra. Linn. *Sp. Pl.* 933. Willd. *v.* 3. 555. *Fl. Br.* 722. *Engl. Bot.* *v.* 14. *t.* 969. *Woodv.* *t.* 151. *Mart. Rust.* *t.* 51. *Hook. Scot.* 204. *DeCand. Syst.* *v.* 2. 608. *Fl. Dan.* *t.* 1582.

TETRADYNAMIA—SILICUOSA. Sinapis. 223

Sinapi n. 465. *Hall. Hist. v. 1. 202.*

S. Sativum secundum. *Raii Syn.* 295. *Ger. Em.* 244; *description only.*

S. sativum primum. *Ger. Em.* 244. *f.* *Dod. Pempt.* 706. *f.*

S. siliquâ latiusculâ glabrâ semine ruffo, sive vulgare. *Bauh. Hist. v. 2. 855. f.*; good.

S. primum. *Matth. Valgr. v. 1. 514. f.* *Camer. Epit.* 332. *f.*

S. rapæ folio. *Moris. v. 2. 215. sect. 3. t. 3. f. 1.*

Common Mustard. *Petiv. H. Brit. t. 45. f. 11.*

In fields, waste ground, and on banks by road sides.

Annual. *June, July.*

A taller plant, with round smooth *branches*, more spreading than either of the foregoing. *Lower leaves* large, lyrate, rough, variously lobed and toothed; *upper ones* stalked, smooth, narrow, entire, spreading or dependent. *Fl.* smaller than in the two former. *Cal.* yellowish, widely spreading, but not quite horizontal. *Pet.* obovate. *Pods* small, obtusely quadrangular, nearly even, and smooth, tipped with the permanent, quadrangular, somewhat elongated, *style*, and capitate *stigma*; but wanting the proper, often seed-bearing, beak of this genus, though the style finally becomes tumid at the base. *Seeds* several, brown, sufficiently known for their domestic use, and stimulating medical properties.

All the figures of the old authors, J. Bauhin's excepted, are copies of Matthioli, and are all defective, as wanting the narrow, entire, more or less pendulous, upper *leaves*, so characteristic of the present species.

4. *S. tenuifolia.* Narrow-leaved Wall Mustard.

Pods erect, on spreading stalks, linear, compressed, slightly beaked. Seeds two-ranked. Leaves once or twice pin-natifid; the uppermost undivided. Stem smooth.

S. tenuifolia. *Br. in Ait. H. Kew. v. 4. 128.* *Comp. ed.* 4. 114. *Hook. Scot.* 204.

Diploaxis tenuifolia. *DeCand. Syst. v. 2. 632.* *Grev. Edin.* 147.

Sisymbrium tenuifolium. *Linn. Sp. Pl.* 917. *Willd. v. 3. 493. Fl. Br.* 703. *Engl. Bot. v. 8. t. 525.* *Bull. Fr. t. 335.*

Brassica muralis. *Huds.* 290. *With.* 592. *Curt. Lond. fasc. 3. t. 38.*

B. Erucastrum. *Huds. ed. 1. 253.*

Eruca n. 461. *Hall. Hist. v. 1. 200.*

E. sylvestris. *Raii Syn.* 296. *Dod. Pempt.* 708. *f.* *Ger. Em.* 246. *f.* *Matth. Valgr. v. 1. 484. f.* *Camer. Epit.* 307. *f.*

E. sativa. *Fuchs. Hist.* 262. *f.*

E. tenuifolia perennis, flore luteo. *Bauh. Hist. v. 2. 861. f.*

Wall Rocket. *Petiv. H. Brit. t. 46. f. 8.*

On old walls, and heaps of rubbish.

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About London, Westminster, Windsor, Chester, Bristol, Yarmouth, and other old towns.

Perennial. *June—October.*

Root tapering, rather woody. *Herb* for the most part entirely smooth, and more or less glaucous all over, fetid when bruised. *Stem* bushy, erect, $1\frac{1}{2}$ or 2 feet high, with numerous round leafy branches, occasionally besprinkled with a few hairs. *Leaves* scattered, a little fleshy, of a glaucous green, very smooth, irregularly lobed and cut; the lower ones stalked, once or twice pinnatifid; uppermost lanceolate, undivided, and sessile; the margins of all entire, or sparingly notched. *Fl.* large and handsome, but unpleasantly scented, light lemon-coloured. *Cal.* spreading considerably from the very base, but not horizontally, the tips mostly hairy. *Pods* an inch or more in length, linear, smooth, compressed, erect, on spreading stalks almost as long; valves undulated, slightly keeled, veiny; beak none, except the rather short, tapering, angular, furrowed *style*, not so tumid at the base as even the last, and destitute of any cell, or rudiment of a seed. *Seeds* in the proper cells of the pod numerous, round, disposed so as to form two, more or less complete, rows in each cell. On this last character Prof. DeCandolle principally founds his genus *Diploaxis* and its name. The want of a distinct seed-bearing beak to the *pod*, in some instances, is likewise noted. But the foregoing species, a genuine *Sinapis*, has scarcely more of a beak than any of them. The learned author candidly allows also that the double row of *seeds* is by no means constant, or without exception; and indeed their arrangement is at all times far less decided than in *Turritis*, where there can be no question about the matter.

5. *S. muralis*. Sand Mustard.

Pods ascending, on spreading stalks, linear, compressed, slightly beaked. *Seeds* two-ranked. *Leaves* sinuated. *Stem* roughish with reflexed bristles.

S. muralis. *Br. in Ait. H. Kew. v. 4. 128. Comp. ed. 4. 115.*

Diploaxis muralis. *DeCand. Syst. v. 2. 634.*

Sisymbrium murale. *Linn. Sp. Pl. 918. Willd. v. 3. 496. Engl. Bot. v. 16. t. 1090. Fl. Br. 1401. Dicks. Dr. Pl. 12.*

S. Erucastrum. *Gouan Illustr. 42. t. 20.*

Eruca viminea, iberidis folio, luteo flore. *Barrel. Ic. t. 131.*

E. minimo flore monspeliensis. *Bauh. Hist. v. 2. 862. f. not descr.*

E. minima monspessulana, flore luteo, siliquâ unciam longâ. *Chabr. Sciagr. 276. f.*

E. monspeliensis, flore minimo luteo. *Moris. v. 2. 229. n. 8. sect. 3. t. 5. f. 9.*

In sandy barren ground near the sea.

TETRADYNAMIA—SILIKUOSA. Raphanus. 225

Common throughout the isle of Thanet, particularly about Ramsgate. *Mr. Dillwyn.* Below Bristol. *Mr. E. Forster.*

Annual. *August, September.*

Root tapering, small. *Stem* branching from the bottom, about a span high, spreading, leafy in the lower part, clothed all over with reflexed bristly hairs. *Leaves* usually quite smooth, of a lightish green, not glaucous, varying much in form, either broadly lanceolate inclining to obovate, or imperfectly lyrate; deeply serrated, or unequally sinuated; always acute, not rounded, at the extremity, and tapering at the base into a *foot-stalk*. *Fl.* lemon-coloured, smaller and paler than the last, in dense abrupt corymbose clusters, greatly elongated after flowering. *Cal.* moderately spreading from the bottom, a little hairy. *Pet.* obovate, somewhat spreading. *Pods* on distant spreading stalks of various lengths, much like those of *S. tenuifolia*, but less decidedly erect, and the *seeds* less accurately double-ranked. *Style* and *stigma* as in that species. The *calyx* in both spreads less than the character of a *Sinapis* requires. I have Gouan's plant from himself. It is not constant enough in the deeper divisions of its *leaves* to be marked as a variety.

344. RAPHANUS. Radish.

Linn. Gen. 343. *Juss.* 238. *Fl. Br.* 723. *Comp. ed.* 4. 109. *Br. in Ait. H. Kew.* v. 4. 129. *DeCand. Syst.* v. 2. 662. *Lam. t.* 566. *Raphanistrum.* *Tourn. t.* 115. *Gærtn. t.* 143.

Cal. erect; leaves oblong, parallel, converging, deciduous; 2 of them slightly prominent at the base. *Pet.* obovate, or inversely heart-shaped, spreading; claws linear, erect. *Filam.* awl-shaped, simple, erect. *Anth.* oblong, a little spreading. *Glands* 4; 2 at the inside of the shorter filaments; 2 at the outside of the longer. *Germ.* cylindrical, tapering. *Style* awl-shaped. *Stigma* capitate, small, entire. *Pod* oblong, imperfectly cylindrical, tapering upward, irregularly tumid, as if more or less jointed, coriaceous, not bursting, of 2 incomplete cells, the membranous partition often obliterated. *Seeds* pendulous, globose, forming a single row; cotyledons folded, incumbent, their doubled edges meeting the radicle.

Upright, branched, spreading, smooth or bristly *herbs*; their lower *leaves* lyrate. *Fl.* large, yellow, white, or purplish, often veiny. *Pods* internally spongy, very variable as to their jointed appearance, in the same species; so that even Prof. DeCandolle preserves the Linnæan genus entire, in opposition to the opinion of Tournefort and Gærtner, who founded their genus *Raphanistrum* on the more decidedly jointed *Pods*, breaking transversely,

226 TETRADYNAMIA—SILIKUOSA. *Raphanus*.

in some instances, when ripe. To this both our species belong.

1. *R. Raphanistrum*. Wild Radish. Jointed Charlock.

Pods jointed, striated, of one cell. Leaves lyrate.

R. Raphanistrum. *Linn. Sp. Pl.* 935. *Amœn. Acad.* v. 6. 448. f. 451. *Willd.* v. 3. 560. *Fl. Br.* 723. *Engl. Bot.* v. 12. t. 856. *Curt. Lond. fasc.* 4. t. 46. *Mart. Rust.* t. 71. *Hook. Scot.* 204. *DeCand. Syst.* v. 2. 666.

R. n. 468. *Hall. Hist.* v. 1. 203.

R. sylvestris. *Ger. Em.* 240. f.

Raphanistrum siliquâ articulatâ glabrâ, majore et minore. *Raii Syn.* 296. *Moris.* v. 2. 265. sect. 3. t. 13. f. 1, 2.

Rapistrum flore albo striato. *Bauh. Hist.* v. 2. 851. f.

R. flore luteo, siliquâ glabrâ articulatâ. *Raii Syn.* 296.

White Charlock. *Petiv. H. Brit.* t. 46. f. 10.

Sinapis arvensis. *Fl. Dan.* t. 678 !

In corn fields, a troublesome weed.

Annual. *June, July.*

Root tapering, slender. *Herb* rough with minute bristles. *Stem* $1\frac{1}{2}$ or 2 feet high, glaucous, branched, leafy; its bristles prominent and pungent. *Leaves* simply lyrate, bluntly toothed, their terminal lobe rounded; upper ones oblong, or lanceolate, acute, undivided, coarsely serrated. *Fl.* corymbose, numerous, larger than in most of our common cruciform plants, either straw-coloured, fading to white, or white from the beginning, strongly veined with purple. *Cal.* a little spreading at the tips only, generally bristly. *Pods* in long clusters, upright, knobbed or apparently jointed, smooth, striated lengthwise when ripe, terminating in the long, permanent, awl-shaped *style*, tipped with the small *stigma*. The *germen* is divided into 2 cells, but the partition is obliterated, and confounded in one spongy mass as the pod ripens. *Seeds* large, globular, solitary in each joint. The plate in *Fl. Dan.* could here have been named from a most slight inspection only; see *Cardamine hirsuta*.

2. *R. maritimus*. Sea Radish.

Pods jointed, deeply furrowed, of one cell. Radical leaves interruptedly lyrate, serrated.

R. maritimus. *Engl. Bot.* v. 23. t. 1643. *Comp. ed.* 4. 115. *Br. in Ait. H. Kew.* v. 4. 129. n. 3. *Hook., Scot.* 201. *DeCand. Syst.* v. 2. 668.

R. Raphanistrum γ. *Fl. Br.* 723.

R. maritimus, flore luteo, siliquis articulatis, secundum longitudinem eminentè striatis. *Raii Syn.* 296.

By the sea-side. *Mr. Stonestreet.*

TETRADYNAMIA—SILICUOSA. Raphanus. 227

In the isle of Bute and other places. *Rev. Dr. Walker*, in the year 1753. On the beach 3 miles from the Mull of Galloway. *Mr. J. Mackay*. In various parts of the coast of Ayrshire, Galloway, &c; *Mr. G. Don. Hooker*. On rocks near Beachy Head, Sussex. *Mr. D. Turner and Mr. Borrer*.

Biennial. *May, June*.

Root large and succulent, sometimes, according to *Dr. Walker*, lasting three years, and preferable to Horse Radish for the table. *Herb* larger than the foregoing. *Stems* 3 or 4 feet high, rough chiefly at the base. *Radical*, and lower *stem-leaves*, large, interruptedly pinnate, more abundantly serrated than in *R. Raphanistrum*; upper ones stalked, simple and undivided, serrated like the rest. *Fl.* more yellow, and less veiny, than in that species. *Pods* more strongly and broadly furrowed, as well as jointed, destitute of roughness. The synonyms of *Morison* and *Petiver*, in *Fl. Br.*, are very inapplicable to this species, with respect to the *root* as well as *leaves*, and I have therefore omitted them here.

Cattle were observed by *Dr. Walker* to be very fond of the herbage.

Class XVI. MONADELPHIA.

Filaments combined; in one set.

Order I. PENTANDRIA. Stamens 5.

345. ERODIUM. *Style* 1. *Fruit* beaked, of 5 aggregate capsules, each tipped with a spiral awn, bearded on the inside.

Lysimachia 1. *Linum*. *Geranium* 8.

Order II. DECANDRIA. Stamens 10.

346. GERANIUM. *Style* 1. *Fruit* beaked, of 5 aggregate capsules, each tipped with a recurved naked awn.

Oxalis. *Spartium*. *Genista*. *Anthyllis*. *Ulex*. *Ononis*.

Order III. POLYANDRIA. Stamens numerous.

349. LAVATERA. *Styles* numerous. *Outer Calyx* 3-lobed. *Capsules* whorled, single-seeded.
348. MALVA. *Styles* numerous. *Outer Cal.* of 3 leaves. *Caps.* whorled, single-seeded.
347. ALTHÆA. *Styles* numerous. *Outer Cal.* in 9 segments. *Caps.* whorled, single-seeded.

MONADELPHIA PENTANDRIA.

345. ERODIUM. Stork's-bill.

L'Herit. Geraniol. unpubl. Ait. H. Kew. ed. 1. v. 2. 414. ed. 2. v. 4. 154. Fl. Br. 727. Comp. ed. 4. 115. Sm, in Rees's Cycl. v. 13. DeCand. Prodr. v. 1. 644.

Geranium. Linn. Gen. 350. Juss. 268. Lam. t. 573. f. 2. Gærtn. t. 79; moschatum.

Nat. Ord. Gruinales, Linn. 14. Gerania. Juss. 73. Geraniaceæ. DeCand. 46. N. 346 the same.

Cal. inferior, of 5 ovate, glandular-pointed, concave, permanent leaves, equal and uniform at the base. *Pet.* 5, obovate, spreading, rather longer than the calyx, generally somewhat irregular. *Nect.* 5 glands, alternate with the petals. *Filam.* 10, awl-shaped, united by their base into a cup; 5 of them perfect, nearly as long as the petals; the alternate 5 shorter and abortive. *Anth.* 5, on the longer filaments only, oblong, versatile. *Germ.* superior, roundish, with 5 furrows. *Style* awl-shaped, erect, longer than the stamens, permanent. *Stigmas* 5, oblong, reflexed. *Caps.* 5, aggregate, membranous, obovate, vertical, separating at their inner margin, sharp-pointed at the base, each tipped at the summit with a long, linear, flat, upright, pointed, converging, rigid awn, hairy at the inside, and at length spirally twisted, adhering by its point to the top of the style; the hairs spreading. *Seeds* 1 or 2, vertical, ovate-oblong.

Herbaceous, or somewhat shrubby, odorous, recumbent.

Leaves generally opposite, stalked, simple, or pinnate, cut.

Stipulas membranous. *Fl.* mostly umbellate, reddish.

Cal. and *stalks* more or less glutinous.

1. *E. cicutarium.* Hemlock Stork's-bill.

Stems procumbent, hairy. Stalks many-flowered. Leaves pinnate; leaflets sessile, pinnatifid, cut. Stamens simple.

E. cicutarium. Fl. Br. 727. Engl. Bot. v. 25. t. 1768. Willd. v. 3. 629. Sibth. 211. Hook. Scot. 205. DeCand. Prodr. v. 1. 646.

Geranium cicutarium. Linn. Sp. Pl. 951. Huds. 300. Curt. Lond. fasc. 1. t. 51. Fl. Dan. t. 986. Ehrh. Pl. Off. 447.

G. n. 944. Hall. Hist. v. 1. 406.

G. cicutæ folio inodorum. Raii Syn. 357. Ger. Em. 945. f.

G. foetens. Riv. Pentap. Irr. t. 115.

230 MONADELPHIA—PENTANDRIA. *Erodium*.

G. primum. *Fuchs. Hist.* 204. *f.*

G. tertium. *Matth. Valgr. v.* 2. 209. *f.*

Herba Roperti. *Brunf. Herb. v.* 2. 37. *f.*

Myrrhida Plinii, &c. *Lob. Ic.* 659. *f.*

β . *Geranium inodorum album.* *Raii Syn.* 357.

γ . *G. pimpinellæ folio.* *Dill. in Raii Syn.* 358. *Giss.* 173.

G. robertianum. *Riv. Pentap. Irr. t.* 114.

Erodium pimpinellæ folium. *Sibth.* 211.

In waste ground frequent.

β . In barren sandy places, chiefly near the sea.

γ . Near Hackney. *Dillenius.* About Oxford. *Sibth.* On sandy ground near the sea ; or on a chalky soil.

Annual. *June—September.*

Root tap-shaped, whitish. *Herb* somewhat hairy and viscid, disagreeably scented, more or less. *Stems* procumbent, round, or a little angular, hairy, mostly branched, leafy, various in number and length. *Leaves* alternate towards the root ; upper ones often opposite ; leaflets deeply pinnatifid, acutely and variously cut. *Stipulas* opposite, ovate, acute, thin, and pellucid. *Fl.* in stalked umbels, opposite to the alternate leaves, otherwise axillary. *Bracteas* under the partial stalks, membranous, jagged. *Pet.* rose-coloured, with 3 dark lines at the base ; in α nearly regular ; in β white ; in γ 2 or 3 of them marked each with a green depression, towards the claw, but this circumstance is extremely variable. *Filam.* all simple. *Caps.* single-seeded, bristly with reflexed hairs.

2. *E. moschatum.* Musky Stork's-bill.

Stems depressed, hairy. Stalks many-flowered. Leaves pinnate ; leaflets nearly sessile, elliptical, unequally cut. Perfect stamens toothed at the base.

E. moschatum. *Fl. Br.* 728. *Engl. Bot. v.* 13. *t.* 902. *Willd. Sp. Pl. v.* 3. 631. *DeCand. Prodr. v.* 1. 647.

Geranium moschatum. *Linn. Sp. Pl.* 951. *Huds.* 300. *Jacq. Hort. Vind. v.* 1. *t.* 55. *Cavan. Diss.* 227. *t.* 94. *f.* 1. *Riv. Pentap. Irr. t.* 112. *Ger. Em.* 941. *f.* *Raii Syn.* 358. *Bauh. Hist. v.* 3. 479. *f.*

G. n. 945. *Hall. Hist. v.* 1. 407.

G. tertium Plinii, Acus muscata. *Dalech. Hist.* 1277. *f.*

In mountainous pastures.

Between Bristol and St. Vincent's rocks. *Ray.* Very common in Craven, Yorkshire. *Dr. Lister.* On Shotover hill, near Oxford. *Bishop of Carlisle.* On Amphthill warren, Bedfordshire. *Rev. Dr. Abbot.* In the mountainous pastures of Yorkshire and Westmoreland, more certainly wild perhaps than elsewhere, having long been cultivated in gardens for its scent.

Annual. *June, July.*

Nearly akin to the foregoing, but differing in its larger paler *leaflets*, much less deeply cut; and in the powerful musky fragrance, as well as greater viscosity, of the whole herb. The *stipulas* are large, rounded and wavy, very thin and membranous. *Bracteas* similar, but smaller. *Pet.* rose-coloured, unspotted, smaller than the last, all nearly equal. Mr. Sowerby observed the abortive *filaments* to be peculiarly broad; and the perfect ones to have a tooth at each side near the base. This last mark would greatly strengthen the specific character, if it should prove constant, which in these organs, so various, if not mutable, in this natural order, cannot absolutely be relied on, unless confirmed by experience.

3. *E. maritimum*. Sea Stork's-bill.

Stems depressed, hairy. Stalks barely three-flowered.

Leaves simple, heart-shaped, cut, crenate, rough.

E. maritimum. *Fl. Br.* 728. *Engl. Bot. v. 9. t. 646.* *Willd. Sp. Pl. v. 3. 639.* *DeCand. Prodr. v. 1. 648.*

Geranium maritimum. *Linn. Sp. Pl.* 951. *Huds.* 301. *Dicks. H. Sicc. fasc.* 11. 11. *Cavan. Diss.* 218. *t. 88. f. 1.*

G. pusillum supinum maritimum, *Althææ* aut *Betonicæ* folio nostras. *Raii Syn.* 356. *Pluk. Almag.* 169. *Phyt. t. 31. f. 4.*

G. minimum procumbens, foliis *betonicæ*. *Moris. v. 2. 512. sect. 5. t. 35. n. 8.*

On the sandy or gravelly sea coasts of Cornwall, Wales, Sussex, &c.

Perennial. *May—September.*

Stems spreading close to the ground, from 3 to 9 inches in length, branched, leafy, hairy. Leaves half an inch long, on stalks of various proportions, roundish, heart-shaped, slightly lobed, and variously notched, rough on both sides with minute close hairs. *Stipulas* purplish. *Fl.* 1 or 2, rarely 3, on each stalk. *Pet.* pale red, very minute, and often partly wanting. *Caps.* bristly; their awns but partially hairy at the lower part. The herb has a strong scent.

MONADELPHIA DECANDRIA.

346. GERANIUM. Crane's-bill.

Linn. Gen. 350. *Juss.* 268. *Fl. Br.* 729. *DeCand. Prodr.* v.1. 639.
Tourn. t. 142. *f.* A—O. *Lam. t.* 573. *f.* 1. *Gærtn. t.* 79; *pratense*.

Nat. Ord. see *n.* 345.

Cal. inferior, of 5 ovate, glandular-pointed, concave, permanent leaves, equal and uniform at the base. *Pet.* 5, inversely heart-shaped, spreading, much larger than the calyx, all equal and regular. *Nect.* 5 glands, alternate with the petals. *Filam.* 10, awl-shaped, united at their base, spreading at the summit; 5 alternate ones longer than the rest, shorter than the corolla. *Anth.* oblong, versatile, very rarely wanting on the 5 shorter filaments. *Germ.* superior, roundish, with 5 furrows. *Style* awl-shaped, erect, longer than the stamens, permanent. *Stigmas* 5, oblong, reflexed. *Caps.* 5, aggregate, membranous, nearly globular, separating at their inner margin, each tipped at the summit with a long, linear, flat, upright, pointed, converging, rigid awn, almost perfectly smooth and naked, at length recurved or revolute, adhering by its point to the top of the style. *Seeds* solitary, roundish-kidney-shaped.

Herbaceous, scarcely at all shrubby. *Branches* and *stalks* tumid at the base. *Leaves* mostly opposite, stalked, lobed in a palmate manner, and cut. *Stipulas* membranous. *Fl.* 1 or 2 on a stalk, either axillary, or opposite to the upper alternate leaves, red, purplish, or blue, generally handsome, without scent.

1. *G. phæum*. Dusky Crane's-bill.

Stalks two-flowered, paniced, erect. Calyx slightly pointed. Capsules keeled; hairy below; wrinkled at the summit. Stamens hairy.

G. phæum. *Linn. Sp. Pl.* 953. *Willd. v.* 3. 699. *Fl. Br.* 729.
Engl. Bot. v. 5. *t.* 322. *Hook. Scot.* 206. *DeCand. Prodr. v.* 1.
 641 *α.* *Fl. Dan. t.* 987. *Cavan. Diss.* 210. *t.* 89. *f.* 2.

G. n. 934. *Hall. Hist. v.* 1. 414.

G. montanum fuscum. *Dill. in Raii Syn.* 361.

G. batrachioides pullo flore. *Ger. Em.* 942. *f.*

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G. primum, pullo flore. *Clus. Hist. v. 2. 99. f. Pann. 415. f. 416.*

G. phæo, sive pullo, flore *Clusii. Bauh. Hist. v. 3. p. 2. 477. f.*

G. phæum, seu fuscum, petalis reflexis. *Moris. v. 2. 515. sect. 5. t. 16. f. 18.*

In mountainous thickets, rare.

Found by Mr. Drayton, apothecary, of Maidstone, at Tovell, in the valley by the old fulling-mill. *Dill.* About Clapham and Ingletton, Yorkshire. *Huds.* In Lancashire, Cambridgeshire, and Bedfordshire. *Engl. Bot.* On a bank at Ash Bocking, Suffolk. *Mrs. Cobbold.* About Newburgh, Yorkshire. *Rev. Archdeacon Peirson.* Most truly wild perhaps in the mountainous parts of Yorkshire, and Lancashire.

Perennial. *May, June.*

Root thick, somewhat woody. *Stem* erect, round, hairy, leafy, $1\frac{1}{2}$ or 2 feet high, paniced at the top, many-flowered. *Leaves* palmate, many-lobed, sharply and unequally cut, strongly veined, rather downy than hairy; their principal lobes often stained with brown at each side near the base; lower ones stalked; uppermost nearly sessile, opposite to the inferior flower-stalks. *Stipulas* lanceolate, brown, hairy. *Stalks* hairy, cloven, bearing two nearly upright *flowers*, with small, brown, opposite *bracteas*, in pairs under each partial stalk. *Cal.* hairy, fringed, but slightly pointed. *Pet.* wavy, with more or less of a terminal point, dark chocolate-coloured; greenish white at the base. Lower part of each *stamen* fringed with long hairs. *Capsules* rather obovate, keeled at the outside, hairy in their lower half, transversely wrinkled in the upper.

G. fuscum of Linnæus, *Mantissa* 97, differs in having simple single-flowered *stalks*, in pairs, distinct from the very base. Otherwise I find no difference. We have it not in Britain. Linnæus who cultivated it observed the *leaves* to be more rigid.

2. *G. nodosum*. Knotty Crane's-bill.

Stalks two-flowered. *Leaves* opposite, five- or three-lobed, pointed, serrated. *Capsules* even, downy all over.

G. nodosum. *Linn. Sp. Pl. 953. Willd. v. 3. 701. Fl. Br. 730. Engl. Bot. v. 16. t. 1091. DeCand. Prodr. v. 1. 640. Cavan. Diss. 208. t. 80. f. 1. Bauh. Pin. 318. Moris. v. 2. 516. sect. 5. t. 16. f. 22.*

G. quintum nodosum Plateau. *Raii Syn. 361. Clus. Hist. v. 2. 101. f. Ger. Em. 947. f.*

G. magnum, folio trifido. *Bauh. Hist. v. 3. p. 2. 478. f.*

Knotty Crane's-bill. *Petiv. H. Brit. t. 65. f. 4.*

In mountainous thickets, very rare.

Wild in the mountainous parts of Cumberland, according to Mr. Archergen, who brought it to Bobart. *Ray.* Confirmed by

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Mr. Woodward. *Withering*. Between Hatfield and Welwyn, Herts. *Rev. Dr. Abbot*.

Perennial. *May—August*.

Root slightly tuberous, rather creeping. *Stems* angular, about 18 inches high, erect, but weak, red, shining and swelled, both above and below each joint. *Leaves* all opposite, dark green, shining, minutely and sparingly hairy, mostly in 3 deep, pointed, cut and serrated lobes, the lower ones in 5 lobes, and with longer stalks. *Fl.* purple, rather large, not numerous, on downy partial stalks in pairs. *Cal.* with a long slender red point, and 3 downy ribs, to each leaf. *Caps.* elliptic-oblong, quite even, without keels, finely downy, or minutely hairy, all over; their awns somewhat downy, but not beset with long prominent hairs as in *Erodium*.

3. *G. sylvaticum*. Wood Crane's-bill.

Stalks two-flowered, somewhat corymbose. Leaves about seven-lobed, cut and serrated. Capsules hairy all over. Stamens awl-shaped, fringed.

G. sylvaticum. *Linn. Sp. Pl.* 954. *Willd. v. 3.* 703. *Fl. Br.* 731. *Engl. Bot. v. 2. t. 121.* *Hook, Scot.* 206. *DeCand. Prodr. v. 1.* 641.

G. palustre? *Rose's Elem. append.* 441. *t. 1.*

G. n. 932. *Hall. Hist. v. 1.* 403.

G. batrachoides montanum nostras. *Raii Syn.* 361.

G. batrachioides alterum. *Ger. Em.* 942. *f.*

Mountain Crow Crane's-bill. *Petiv. H. Brit. t. 65. f. 8.*

In woods, thickets, and pastures, chiefly in the north of England and south of Scotland.

At Spixworth, Norfolk. *Mr. Humphrey*. Near Lynn. *Mr. Crowe*. Perennial. *June, July*.

Root rather woody. *Stems* 2 or 3 feet high, erect, roundish, rough with small deflexed hairs, much branched, leafy. *Leaves* slightly palmate, with 5 or 7 deep lobes, coarsely cut and serrated, veiny, finely hairy on both sides; the lowermost on long footstalks. *Fl.* larger than either of the preceding, an inch or more in breadth, of a fine light purple, with crimson veins. *Cal.* like the last, but more hairy. *Pet.* entire, or slightly notched, hairy at the claw. *Stam.* all nearly equal, awl-shaped, membranous at the edges, fringed more than half way up. *Caps.* ovate, keeled, even, not wrinkled, most hairy about the keel, marked at each side, towards the top, with a brown rib. *Seeds* dotted.

I have been sparing of synonyms, because of several foreign species, nearly related to this, and occasionally confounded with it. Cavanilles professes never to have seen *G. sylvaticum*. His *G. batrachioides*, *Diss.* 211. *t. 85. f. 2*, is more like *pratense* in the form of its leaves, and in having large blue flowers. Nothing

is better known or defined than our *sylvaticum*, nor could Mr. Rose, my first botanical preceptor, have suspected it, even at the time he wrote, to have been the *palustre*, had he ever seen a specimen of the latter, or its figure in the *Hortus Elthamensis*, which I know he had not.

4. *G. pratense*. Blue Meadow Crane's-bill.

Stalks two-flowered. Leaves in about seven deep segments, sharply pinnatifid and serrated. Capsules hairy all over. Stamens smooth, much dilated at the base.

G. pratense. Linn. *Sp. Pl.* 954. Willd. *v.* 3. 705. *Fl. Br.* 732. *Engl. Bot.* *v.* 6. *t.* 404. Curt. *Lond. fasc.* 4. *t.* 49. Dicks. *H. Sicc. fasc.* 16. 18. Hook. *Scot.* 206. DeCand. *Prodr.* *v.* 1. 641. Cavan. *Diss.* 210. *t.* 87. *f.* 1. Ehrh. *Pl. Off.* 457.

G. n. 931. Hall. *Hist.* *v.* 1. 403.

G. batrachoides. Raii *Syn.* 360. Ger. *Em.* 942. *f.* Bauh. *Hist.* *v.* 3. *p.* 2. 475. *f.* Dalech. *Hist.* 1279. *f.*

G. quintum. Fuchs. *Hist.* 208. *f.* Ic. 118. *f.*

G. quartum. Matth. *Valgr.* *v.* 2. 210. *f.* Camer. *Epit.* 602. *f.*

Crow Crane's-bill. Petiv. *H. Brit.* *t.* 65. *f.* 7.

In rich, rather moist, pastures and thickets, especially in the hilly parts of England; also at Battersea, Harrow, and other places not far from London.

Perennial. June, July.

Larger in every part than the last, especially the *flowers*, which are of a fine blue, not purple, and are often irregularly striped or blotched with white, sometimes entirely white; and they have been found double, near Athol house, Scotland, by the late Lady Charlotte Murray. The *leaves* are much more deeply divided than those of *G. sylvaticum*, their lobes more regularly and acutely pinnatifid. The *stamens* differ materially, being longer and more slender, as well as quite smooth, but especially in being greatly dilated into a triangular figure at the base. *Caps.* even, hairy all over. *Seeds* dotted.

5. *G. robertianum*. Stinking Crane's-bill. Herb Robert.

Stalks two-flowered. Leaves somewhat pedate, pinnatifid, five-angled. Calyx with ten angles. Capsules wrinkled, simply keeled.

G. robertianum. Linn. *Sp. Pl.* 955. Willd. *v.* 3. 714. *Fl. Br.* 732. *Engl. Bot.* *v.* 21. *t.* 1486. Curt. *Lond. fasc.* 1. *t.* 52. Hook. *Scot.* 207. DeCand. *Prodr.* *v.* 1. 644. Cavan. *Diss.* 215. *t.* 86. *f.* 1. *Fl. Dan.* *t.* 694. Bull. *Fr.* *t.* 201. Raii *Syn.* 358. Ger. *Em.* 939. *f.* Dod. *Pempt.* 62. *f.* Bauh. *Hist.* *v.* 3. *p.* 2. 480. *f.*

G. n. 943. Hall. *Hist.* *v.* 1. 406.

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G. tertium. *Fuchs. Hist.* 206. *f.* *Ic.* 116. *f.*

G. Quintum. *Matth. Valgr.* v. 2. 211. *f.* *Camer. Epit.* 603. *f.*

Herba Roberti. *Dalech. Hist.* 1278. *f.*

Herb Robert. *Petiv. H. Brit.* t. 65. *f.* 5.

β. *Geranium lucidum saxatile*, foliis *Geranii robertiani*. *Raii Syn.* 358.

Shining Herb Robert. *Petiv. H. Brit.* t. 65. *f.* 6.

In waste ground, on walls, banks, and under hedges, common.

β. Near the sea. In Dorsetshire. *Sherard.* Selsey island, Sussex. *Dillenius.* A weed in Chelsea garden.

Annual. *May—October.*

Root tapering. *Stems* several, spreading in every direction, and partly recumbent, round, leafy, branched, red, brittle and succulent, a little hairy, chiefly at one side. *Leaves* opposite, on long stalks, ternate, cut in a pedate manner, their outline unequally five-angled, their surface shining, more or less hairy; in β they are still more shining, as well as more fleshy. *Stalks* lateral and terminal, each bearing two bright crimson flowers, occasionally white, smaller than any of the preceding. *Cal.* brownish, hairy, with 10 angles when closed. *Pet.* obovate, entire. *Stam.* awl-shaped, smooth. *Caps.* obovate, downy, simply keeled, curiously marked, at the outer edge, with elevated interbranching wrinkles. *Seeds* perfectly smooth and even.

This herb has a strong disagreeably pungent smell. Bugs are said to avoid it. In autumn it assumes a deep red hue.

6. *G. lucidum.* Shining Crane's-bill.

Stalks two-flowered. *Leaves* five-lobed, rounded. *Calyx* pyramidal, transversely wrinkled. *Capsules* wrinkled, triply keeled.

G. lucidum. *Linn. Sp. Pl.* 955. *Willd. v.* 3. 709. *Fl. Br.* 733. *Engl. Bot.* v. 2. t. 75. *Hook. Scot.* 207. *Lond.* t. 32. *DeCand. Prodr.* v. 1. 644. *Fl. Dan.* t. 218. *Cavan. Diss.* 214. t. 80. *f.* 2. *Bauh. Hist.* v. 3. p. 2. 481. *f.*

G. n. 942. *Hall. Hist.* v. 1. 406.

G. saxatile. *Raii Syn.* 361. *Thal. Harcyn.* 44. t. 5; excellent. *Ger. Em.* 938. *descr. n.* 3.

G. alterum montanum saxatile rotundifolium. *Column. Ecphr.* 138. t. 137.

Shining Crane's-bill. *Petiv. H. Brit.* t. 64. *f.* 12.

On walls, cottage roofs, and moist rocks, chiefly in the mountainous parts of Great Britain.

About Bury, Suffolk. *Mr. Woodward.* Between Mortlake and Kew. *Hudson.* Perfectly naturalized at Lakenham, near Norwich, by the late Mr. Crowe.

Annual. *May—August.*

Root very small and slender. *Herb* shining, succulent, turning bright red when exposed to the light, quite smooth except a few variable scattered hairs on the foliage. *Stems* spreading in every direction, much branched, leafy, brittle. *Leaves* much smaller, and less divided, than in the last, roundish-kidney-shaped, on long stalks, 5-lobed, rather bluntly notched. *Fl.* small, bright rose-coloured. *Cal.* pyramidal when closed, with 5 angles, smooth, some of its leaves strongly wrinkled transversely, and all strongly keeled. *Pet.* narrow, entire. *Caps.* oblong, somewhat compressed, reticulated at the sides, hairy at the summit, triply keeled at the back, the lateral keels formed by the union of the reticulations, which also make 3, sometimes 4 or 5, intermediate furrows. *Seeds* oval, very smooth.

Haller says of this species *tota planta amat rubescere*.

7. *G. molle*. Common Dove's-foot Crane's-bill.

Stalks two-flowered, alternate, opposite to the leaves, which are rounded, many-lobed, notched, and downy. *Capsules* numerously wrinkled, smooth. *Seeds* without dots.

G. molle. Linn. *Sp. Pl.* 955. Willd. *v.* 3. 710. *Fl. Br.* 734. *Engl. Bot.* *v.* 11. *t.* 778. *Curt. Lond. fasc.* 2. *t.* 50. *Hook. Scot.* 207. *DeCand. Prodr.* *v.* 1. 643. *Fl. Dan.* *t.* 679. *Cavan. Diss.* 203. *t.* 83. *f.* 3. *Ehrh. Herb.* 129.

G. n. 939. *Hall. Hist.* *v.* 1. 405.

G. columbinum. *Raii Syn.* 359. *Ger. Em.* 938.

G. columbinum villosum, petalis bifidis. *Vaill. Par.* 79. *t.* 15. *f.* 3.

G. secundum. *Matth. Valgr.* *v.* 2. 208. *f.* *Camer. Epit.* 600. *f.*

Dove Crane's-bill. *Petiv. H. Brit.* *t.* 64. *f.* 1—3.

In cultivated and waste ground, meadows, pastures, and by way sides, every where.

Annual. *April—August.*

Root tapering. *Herb* of a light hoary green, downy all over with fine soft hairs, its size and luxuriance extremely variable. *Stems* several, spreading, or decumbent, leafy, slightly branched, reddish, hairy, usually about a foot long, sometimes hardly 3 inches. *Leaves* rounded rather than kidney-shaped, in many not very deep lobes, all their segments rather broad and wedge-shaped than linear; radical ones numerous, on long *footstalks*; the rest alternate, more deeply cut, on shorter stalks. *Flower-stalks* solitary, alternate, opposite to the leaves, widely spreading. *Fl.* rather small, light reddish purple, with cloven *petals*. *Stam.* all perfect. *Cal.* hairy. *Caps.* roundish, curiously puckered or wrinkled, in many transverse curved lines, but not hairy. *Seeds* oval, perfectly smooth and even, not dotted.

The wrinkled *capsules*, to which Linnæus has incorrectly applied the expression "*arillis lævibus*," and which Cavanilles overlooked, are well described by Curtis. They constitute the most essential difference between this species, in all its wide varia-

tions of magnitude, and several of the following, with which it has long been habitually confounded. Linnæus in writing his *Species Plantarum* certainly did not distinguish *G. molle* from what he afterwards named, not happily, *pyrenaicum*, whose capsules are even, though hairy.

8. *G. pusillum*. Small-flowered Crane's-bill.

Stalks two-flowered. Leaves kidney-shaped, palmate, cut, downy. Capsules keeled, even, clothed with erect hairs. Seeds without dots. Anthers only five.

G. pusillum. Linn. *Sp. Pl.* 957. Willd. *v.* 3. 713. *Fl. Br.* 734. *Engl. Bot.* *v.* 6. *t.* 385. Huds. *ed.* 1. 266. Dicks. *Dr. Pl.* 78. Hook. *Scot.* 207. DeCand. *Prodr.* *v.* 1. 643. Cavan. *Diss.* 202. *t.* 83. *f.* 1. Ehrh. *Herb.* 130.

G. molle β . Huds. *ed.* 2. 303.

G. parviflorum. Curt. *Lond. fasc.* 6. *t.* 36. Sibth. 213. Abbot 151.

G. malvæfolium. Scop. *Carn.* *v.* 2. 37. With. 603.

G. n. 940. Hall. *Hist.* *v.* 1. 405.

G. columbinum majus, flore minore cæruleo. Raii *Syn.* 358. *Hist.* *v.* 2. 1059. Vaill. *Par.* 79. *t.* 15. *f.* 1.

G. alterum. Fuchs. *Hist.* 205. *f.* Ic. 115; same fig. diminished.

Small-flowered Dove Crane's-bill. Petiv. *H. Brit.* *t.* 64. *f.* 4.

β . *Fl. Br.* 735. DeCand. *Prodr.* *v.* 1. 643.

G. humile. Cavan. *Diss.* 202. *t.* 83. *f.* 2.

G. pusillum. Burm. *Ger.* 27.

G. columbinum humile, flore cæruleo minimo. Dill. in Raii *Syn.* 359. *t.* 16. *f.* 2.

In gravelly fields and waste ground, very common.

Annual. June—September.

Root tapering. Habit and pubescence much like the last species, but the whole plant in general is smaller, especially the flowers, which have but 5 perfect stamens, and their blueish petals scarcely extend beyond the calyx. The leaves are mostly opposite, more deeply lobed, each lobe oblong-wedge-shaped, and pretty regularly 3-cleft. But the clear and certain specific difference rests on the capsules, which are keeled, and quite even, not wrinkled as in *G. molle*, neither are they smooth as in that, but covered with close-pressed, or upright, short hairs. The seeds are, like those of the *molle*, quite smooth; not dotted as in *G. rotundifolium*.

For the accurate discrimination of these 3 species and the *pyrenaicum*, about which all botanists had been uncertain, I am, like Mr. Curtis, indebted to my late friend Mr. Davall. They can never more be mistaken.

The variety β , examined in the Sherardian herbarium at Oxford, differs merely in being much smaller than usual. Indeed few plants vary more in size than the present.

9. *G. pyrenaicum*. Perennial Dove's-foot Crane's-bill.

Stalks two-flowered. Petals twice the length of the calyx.

Leaves kidney-shaped, lobed. Capsules keeled, even, somewhat downy. Seeds without dots.

G. pyrenaicum. Linn. Mant. 97 & 257. Willd. Sp. Pl. v. 3. 708. Fl. Br. 735. Engl. Bot. v. 6. t. 405. Huds. 302. Curt. Lond. fasc. 3. t. 42. Lightf. 367. Hook. Scot. 206. DeCand. Prodr. v. 1. 643. Burm. Ger. 27. Cavan. Diss. 203. t. 79. f. 2.

G. perenne. Huds. ed. 1. 265.

G. n. 12. Ger. Gallopr. 434. t. 16. f. 2.

G. columbinum perenne pyrenaicum maximum. Tourn. Inst. 268. Herb. Tourn.

In meadows and pastures.

By the river between Bingley and Keighley, Yorkshire; also near Enfield, and about Brompton, Chelsea, and elsewhere near London. Huds. About Edinburgh. Dr. Parsons and others. At East Winch and West Bilney, Norfolk. Mr. Crowe. Near Oxford, at the back of St. John's college. Mr. Woodward.

Perennial. June, July.

Root tuberous, perennial. Stems 2 or 3 feet high, upright, leafy, branched, clothed with spreading, or somewhat deflexed, fine, soft hairs. Leaves deep green, finely hairy, rather soft to the touch; the lower ones on very long stalks, kidney-shaped, 2 or 3 inches wide, lobed more or less deeply, the segments notched, rounded and bluntish; upper ones opposite on shorter stalks, with fewer, deeper, more spreading lobes. Stipulas broad, hairy, jagged at the points. Fl. light purple, much larger than those of *G. molle*. Cal. pointed, downy and somewhat fringed, scarcely half the length of the petals, which are inversely heart-shaped, with short very hairy claws. Stam. all perfect, but the 5 outer ones, as Mr. Curtis remarks, soon drop their anthers, whence they have been supposed originally imperfect. Caps. keeled, even, minutely downy all over when young, but subsequently becoming smoother. Seeds with a perfectly even surface.

The flowers are sometimes white. Linnæus confounded this with his *molle* originally, and it is also the large-flowered *molle* of Mr. Curtis, found about Chelsea hospital. His figures of both are excellent, and he has correctly described their capsules, though he did not contrast them in the specific characters, for which these parts alone are all-sufficient.

In one of the Linnæan specimens I find a wrinkle or two at each side of the keel, of some of the capsules, not of all, nor do these by any means resemble the copiously wrinkled capsules of *G. molle*.

10. *G. rotundifolium*. Soft Round-leaved Crane's-bill.

Stalks two-flowered. Petals entire. Leaves kidney-shaped, cut, downy. Capsules even, hairy. Seeds reticulated.

G. rotundifolium. *Linn. Sp. Pl.* 957. *Willd. v. 3.* 712. *Fl. Br.* 736. *Engl. Bot. v. 3. t.* 157. *Lightf.* 1106. *Hook. Scot.* 207? *DeCand. Prodr. v. 1.* 643. *Cavan. Diss.* 214. *t. 93. f. 2.* *Ehrh. Herb.* 139.

G. malvaceum α . *Burm. Ger.* 24.

G. n. 941. *Hall. Hist. n.* 1. 405.

Large-flowered Dove Crane's-bill. *Petiv. H. Brit. t.* 64. *f. 5.*

In waste ground and barren pastures, as also on walls and banks, but not very common.

About Bath, Bristol and London. *Huds.* At Hackney and Islington, and at Church Bramton, Northamptonshire. *Mr. E. Forster.* Common in Suffolk. *Mr. Woodward.* Near North Marchiston, the seat of Principal Robertson. *Dr. Hope.*

Annual. *June, July.*

Whole *herb* peculiarly soft, like velvet, with a considerable degree of viscosity, noticed by Haller. In general appearance it most resembles the usual state of *G. molle*; but all the *leaves*, even the uppermost, are opposite. This character has led me to transfer to the *molle* some synonyms of old authors, applied in *Fl. Br.*, on the authority of C. Bauhin and others, to the present species; for the alternate *leaves* in their figures, not to mention other characters, when carefully examined, agree better with that far more common plant than with this. The *flowers* of *G. rotundifolium* have a viscid *calyx*, and narrow, undivided, light crimson *petals*. *Caps.* turgid, thin, slightly keeled, clothed with prominent hairs; the surface quite even, never wrinkled; the *awns* are, in like manner, hairy externally. *Seeds* oval, not so properly dotted, as entirely covered with a curious net-work of fine, regular, prominent wrinkles; which obviously and decidedly distinguish this from every species with which it could be confounded; especially from *molle* and *pusillum*, under all their different aspects. No ambiguity attends this character. DeCandolle has understood and adopted it; Willdenow omits it, and Cavanilles says the *fruit* and *seeds* of *G. rotundifolium* are the same as those of the *lucidum*; for indeed he paid no proper attention to those important parts. Lightfoot does not advert to the *seeds* of the *rotundifolium*; but I have specimens from himself correctly named. We now readily discriminate these plants, which Haller found so difficult, and Linnæus so little understood. No part of our whole *Flora* is more free from obscurity; nor are the foreign species of *Geranium* and its allies less capable of clear illustration on the same principles.

11. *G. dissectum*. Jagged-leaved Crane's-bill.

Stalks two-flowered. Petals cloven. Leaves in five deep lacinated segments. Capsules hairy. Seeds reticulated.

G. dissectum. Linn. *Sp. Pl.* 956. Willd. v. 3. 712. Fl. Br. 737. Engl. Bot. v. 11. t. 753. Curt. Lond. fasc. 6. t. 45. Hook. Scot. 208. DeCand. Prodr. v. 1. 643. Fl. Dan. t. 936. Cavan. Diss. 199. t. 78. f. 2.

G. n. 937. Hall. Hist. v. 1. 405.

G. columbinum majus, dissectis foliis. Ger. Em. 938. Raii Syn. ed. 2. 218. ed. 3. 359; omitting the synonyms, introduced by Dillenius.

G. columbinum majus, foliis imis longis, usque ad pediculum divis. Moris. v. 2. 511. sect. 5. t. 15. f. 3; very bad. Vaill. Par. 79. t. 15. f. 2; excellent.

Jagged Dove Crane's-bill. Petiv. H. Brit. t. 64. f. 6.

β. *G. columbinum maximum, foliis dissectis*. Raii Syn. ed. 2. 219. ed. 3. 360.

Plot's Jagged Crane's-bill. Petiv. H. Brit. t. 64. f. 7.

In barren gravelly waste ground, hedges, and fallow fields, frequent.

Annual. May, June.

Stems weak and straggling, 12 or 18 inches long, branched, leafy, somewhat angular, covered with short deflexed hairs. Leaves firmer in substance than those of the 4 preceding, and divided very nearly to the bottom into 5 or 7 principal segments, each of which is also cut into 3 or more, jagged or entire, narrow lobes; all clothed with short, scattered, rather close hairs, most abundant on the ribs beneath. Footstalks of the lower leaves very long; of the upper shorter than the leaves; all rough with reflexed hairs. Fl. pale crimson, rather small, on short, axillary, cloven stalks. Cal. strongly pointed. Pet. inversely heart-shaped, hairy at the claw. Anth. blue. Caps. wrinkled transversely in some degree, but less remarkably than those of *G. molle*, and clothed with prominent hairs. Seeds oval, rather larger than the last, and in like manner covered with beautiful more prominent reticulations. The whole habit, leaves and petals of the two species are abundantly different.

β is hardly a variety.

12. *G. columbinum*. Long-stalked Crane's-bill.

Stalks two-flowered, thrice as long as the leaves, which are in five, very deep, lacinated segments. Capsules quite even and smooth. Seeds reticulated.

G. columbinum. Linn. *Sp. Pl.* 956. Willd. v. 3. 711. Fl. Br. 737. Engl. Bot. v. 4. t. 259. Hook. Scot. 208. DeCand. Prodr. v. 1. 643. Cavan. Diss. 200. t. 82. f. 1. Fl. Dan. t. 1222.

G. n. 938. *Hall. Hist. v. 1.* 405.

G. columbinum, dissectis foliis, pediculis florum longissimis. *Raii Syn. ed. 2.* 218. *ed. 3.* 359: *Vaill. Par. 79. t. 15. f. 4.*

G. columbinum annuum minus, folio tenuius laciniato, flore pediculo longissimo insistente. *Moris. v. 2.* 512. *sect. 5. t. 15. f. 5;* very bad.

G. quartum. *Fuchs. Hist. 207. f. Ic. 117. f.*

G. gruinalle, folio tenuitè diviso. *Bauh. Hist. v. 3. p. 2.* 474. *f. copied from Fuchsius.*

Gruinalis. *Dalech. Hist. 1278. f;* from the same.

Bobart's long cut Crane's-bill. *Petiv. H. Brit. t. 64. f. 8.*

In fields, or on dry banks, on a gravelly or limestone soil, sparingly, in various parts of Britain.

Annual. *June, July.*

Root tapering. *Whole herb* slender, mostly procumbent, bright green, clothed with small, rigid, close, bristly hairs; those of the stem and stalks pointing downwards, the rest upwards. *Leaves* divided to the very base into 5 pinnatifid or cut, lobes, with linear, acute, rough segments, not at all soft or downy. *Flower-stalks* axillary, slender, cloven about the middle, spreading, thrice as long as the adjoining leaves and their *footstalks*. *Bracteas* aggregate at the bases and forks of the flower-stalks, awl-shaped, red. *Fl.* of a blueish rose-colour, larger than the last. *Cal.* pyramidal, rough, strongly awned. *Pet.* sometimes slightly notched, sometimes pointed. *Anth.* blue. *Caps.* keeled, peculiarly smooth and even. *Awns* scarcely rough. *Seeds* finely reticulated.

Dillenius, in his edition of Ray's *Synopsis*, has applied the above synonyms of Fuchsius and J. Bauhin to *G. dissectum*, commending that of Fuchsius; but the slightest inspection will detect his error. Ray's own synonyms, always the most correct, must be sought in his 2d edition.

13. *G. sanguineum.* Bloody Crane's-bill.

Stalks single-flowered. Leaves roundish, in five or seven, deeply separated, three-cleft lobes. Capsules even; bristly at the summit. Seeds minutely wrinkled.

G. sanguineum. *Linn. Sp. Pl. 958. Willd. v. 3.* 697. *Fl. Br. 738. Engl. Bot. v. 4. t. 272. Hook. Scot. 206. Lond. t. 155,* excellent. *Dicks. H. Sicc. fasc. 16. 19. DeCand. Prodr. v. 1.* 639. "*Fl. Dan. t. 1107.*" *Bull. Fr. t. 12. Cavan. Diss. 195. t. 76. f. 1. Bauh. Hist. v. 3. p. 2.* 478. *f.*

G. n. 930. *Hall. Hist. v. 1.* 402.

G. hæmatodes. *Raii Syn. 360. Clus. Pan. 419. f. 421. Hist. v. 2.* 102. *f. Dalech. Hist. 1279. f.*

G. columbinum erectum, tenuius laciniatum, flore magno. *Loes. Pruss. 103. t. 18.*

G. sanguinarium. *Ger. Em.* 945. *f.*

G. sextum. *Fuchs. Hist.* 209. *f.*

Sanguinaria radix. *Trag. Hist.* 348. *f.*

Bloody Crane's-bill. *Petiv. H. Brit. t.* 64. *f.* 9.

β. *Geranium hæmatodes*, foliis majoribus, pallidioribus, et altius incis. *Raii Syn. ed.* 2. 219. *ed.* 3. 360.

Jagged Bloody Crane's-bill. *Petiv. H. Brit. t.* 64. *f.* 10.

γ. *Geranium hæmatodes Lancastrense*, flore eleganter striato. *Raii Syn. ed.* 2. 219. *ed.* 3. 360. *Dill. Elth.* 163. *t.* 136.

G. lancastriense. *With.* 600. *Hull. ed.* 1. 152.

G. prostratum. *Cavan. Diss.* 196. *t.* 76. *f.* 3.

Striped Bloody Crane's-bill. *Petiv. H. Brit. t.* 64. *f.* 11.

In bushy, stony, rather hilly situations, or upon limestone rocks.

γ. On the sandy coast of the isle of Walney, Lancashire.

Perennial. *July—September*.

Root stout and woody, knotty, of a dark reddish brown, and an astringent quality, creeping, as Dr. Hooker observes, considerably. *Stems* several, lax and spreading, $1\frac{1}{2}$ or 2 feet long, often prostrate, as in β, or pendulous in craggy situations; round, branched, leafy; the hairy pubescence horizontally prominent. *Leaves* opposite, stalked, dark green, roughish, deeply lobed and cut; their outline somewhat orbicular. *Stipulas* short and broad, hairy. *Flower-stalks* very long, solitary and single-flowered, though with a joint, and pair of small *bracteas*, above the middle. *Fl.* large, above an inch broad, of a fine crimson or blood-colour; in β flesh-coloured, with purple veins. *Cal.* awned, generally 5-ribbed. *Pet.* inversely heart-shaped. *Caps.* keeled, even, a little downy, and crowned with several white bristles. *Seeds* rather kidney-shaped, dark brown, not smooth, but all over very curiously and minutely wrinkled and dotted, as described in *Fl. Br.*; sometimes 2 in each capsule.

The late Mr. Davall sent from Switzerland a variety with 2 flowers on each stalk, which Haller says is not rare. We have no tidings of any such in Britain.

The maritime varieties with white flowers, so frequent in some of this genus, as well as in *Erodium*, seem to account for the pale hue of our variety β. This is not always prostrate, and though constant in colour when cultivated, presents no good specific distinction.

MONADELPHIA POLYANDRIA.

347. ALTHÆA. Marsh-mallow.

Linn. Gen. 353. *Juss.* 272. *Fl. Br.* 739. *DeCand. Prodr.* v. 1. 436. *Lam. t.* 581. *Gærtn. t.* 136.

Nat. Ord. *Columniferae*. *Linn.* 37. *Malvaceae*. *Juss.* 74.

Two following genera the same.

Cal. double, permanent; *outer* smallest, of 1 leaf, in about 9 narrow deep segments; *inner* of 1 leaf; divided half way down into 5 broader segments. *Pet.* 5, inversely heart-shaped, abrupt, rather oblique, flat, attached by their broad claws to the bottom of the tube of the stamens. *Filam.* numerous, capillary, united below into a tube; separate in the upper part, both at the summit and sides. *Anth.* somewhat kidney-shaped. *Germ.* orbicular, depressed. *Style* cylindrical, as long as the tube of the filaments. *Stigmas* about 20, bristle-shaped, nearly the length of the style. *Capsules* as many as the stigmas, compressed, ranged in a circle round the columnar *receptacle*, each of 2 valves and 1 cell, finally deciduous. *Seeds* solitary, kidney-shaped, compressed.

Upright *herbs*, either finely downy, or hairy, with lobed, usually palmate, toothed, stalked, alternate *leaves*. *Stipulas* in pairs. *Fl.* stalked, aggregate, axillary and terminal, reddish.

Alcea, the Hollyhock, is united to this genus, perhaps justly, by Schreber, Jussieu, DeCandolle and others, as differing chiefly in the fewer segments of its exterior *calyx*.

1. *A. officinalis*. Common Marsh-mallow.

Leaves simple, very soft and downy, slightly five-lobed.

A. officinalis. *Linn. Sp. Pl.* 966. *Willd. v.* 3. 770. *Fl. Br.* 739. *Engl. Bot. v.* 3. *t.* 147. *Woodv. t.* 53. *Hook. Scot.* 208. *DeCand. Prodr.* v. 1. 436. *Fl. Dan. t.* 530. *Cavan. Diss.* 93. *t.* 30. *f.* 2. *Bull. Fr. t.* 373.

A. n. 1074. *Hall. Hist. v.* 2. 23.

A. vulgaris. *Raii Syn.* 252.

A. Ibiscus. *Ger. Em.* 933. *f.*

Althæa. *Fuchs. Hist.* 15. *f.* *Ic.* 7. *f.* *Matth. Valgr. v.* 2. 276. *f.* *Camer. Epit.* 667. *f.* *Dalech. Hist.* 590. *f.*

β. *A. vulgari similis*, folio retuso brevi. *Raii Syn.* 252.

In marshes, especially towards the sea, abundantly.

Perennial. *July—September*.

Root tap-shaped, rather woody. *Herb.* of a hoary green, peculiarly soft and downy, with fine starry pubescence. *Stems* several, about a yard high, simple, round, leafy, tough and pliant.

Leaves ovate or heart-shaped at the base, various in breadth, plaited, 5-ribbed, unequally serrated, soft and pliable, more or less deeply divided into 5 acute lobes. *Fl.* in very short, dense, axillary *panicles*, rarely solitary, of a delicate uniform blush-colour, not inelegant. *Outer calyx*, with 8, 9, 10 or 12 divisions. The whole plant, especially the *root*, yields in decoction a plentiful tasteless colourless mucilage, very salutary in cases of internal irritation.

348. MALVA. Mallow.

Linn. Gen. 354. *Juss.* 272. *Fl. Br.* 740. *DeCand. Prodr.* v. 1. 430. *Tourn. t.* 24. *Lam. t.* 582. *Gærtn. t.* 136.

Nat. Ord. see. n. 347.

Cal. double, permanent; *outer* smallest, of 3 ovate acute leaves; *inner* of 1 leaf, divided half way down into 5 broader segments. *Pet.* 5, inversely heart-shaped, abrupt, rather oblique, flat, their claws attached to the tube of the stamens. *Filam.* numerous, capillary, united below into a tube; separate at the summit. *Anth.* kidney-shaped. *Germ.* orbicular, depressed. *Style* cylindrical. *Stigmas* numerous, about the same length, bristle-shaped. *Caps.* as many as the stigmas, compressed, ranged in a circle round the columnar *receptacle*, each of 2 valves and 1 cell, finally deciduous. *Seeds* kidney-shaped, solitary; rarely 2 or 3.

Herbaceous or shrubby, downy or hairy. *Leaves* simple, mostly plaited and lobed. *Fl.* purplish, or white; in several exotic species yellow; all axillary or terminal, generally stalked and aggregate. Qualities mucilaginous. Fibres of the bark tough.

1. *M. sylvestris*. Common Mallow.

Stem upright, herbaceous. Leaves with seven acute lobes. Footstalks and flower-stalks hairy.

M. sylvestris. *Linn. Sp. Pl.* 969. *Willd. v.* 3. 787. *Fl. Br.* 740. *Engl. Bot. v.* 10. t. 671. *Curt. Lond. fasc.* 2. t. 51. *Woodv. t.* 54. *Hook. Scot.* 208. *Ger. Em.* 930. f. *DeCand. Prodr. v.* 1. 432. *Cavan. Diss.* 78. t. 26. f. 2. *Fl. Dan. t.* 1223. *Bull. Fr. t.* 225. *Ehrh. Pl. Off.* 348.

M. n. 1069. *Hall. Hist. v.* 2. 22.

M. vulgaris. *Raii Syn.* 251.

M. equina. *Brunf. Herb. v.* 2. 71. f.

M. sylvestris elatior. *Fuchs. Hist.* 509. f. *Ic.* 291. f.

Malva. *Matth. Valgr. v.* 1. 413. f. *Camer. Epit.* 238. f.

About hedges, road sides, and in cultivated as well as waste ground, common.

Perennial. *May—August.*

Root tapering, branching, whitish. *Stem* much branched and widely spreading, $1\frac{1}{2}$ to 3 feet high; in a barren soil recumbent.

Leaves deep green, soft and downy, serrated, plaited; the uppermost with fewer, but deeper, more acute, lobes, than the lower ones. *Fl.* numerous, of a shining purple, veiny, on simple, aggregate, hairy, axillary stalks. *Pollen* whitish, large. External part of the *capsules* reticulated.

Mucilaginous and emollient like the Marsh-mallow.

2. *M. rotundifolia*. Dwarf Mallow.

Stems prostrate. Leaves roundish-heart-shaped, bluntly five-lobed. Stalks when in fruit bent downwards.

M. rotundifolia. *Linn. Sp. Pl.* 969. *Willd. v. 3.* 786. *Fl. Br.* 741. *Engl. Bot. v. 16. t.* 1092. *Curt. Lond. fasc. 3. t.* 43. *Hook. Scot.* 208. *DeCand. Prodr. v. 1.* 432. *Fl. Dan. t.* 721. *Cavan. Diss.* 79. *t. 26. f.* 3. *Bull. Fr. t.* 161.

M. n. 1070. *Hall. Hist. v. 2.* 22.

M. sylvestris minor. *Raii Syn.* 251.

M. sylvestris pumila. *Ger. Em.* 930. *f.* *Fuchs. Hist.* 508. *f.* *Ic.* 290. *f.* *Dod. Pempt.* 653. *f.*

Malva. Brunf. Herb. v. 2. 70. *f.*

β . *M. pusilla*. *Engl. Bot. v. 4. t.* 241. *With.* 612.

M. parviflora. *Huds.* 307; *not of Linn.*

M. minor, flore parvo cæruleo. *Dill. in Raii Syn.* 251.

In waste ground, and by way sides in towns or villages, frequent.

β . Near Hithe in Kent. *Sherard, and Hudson.*

Annual. *June—September.*

Root tapering. Whole plant smaller than the last, and quite prostrate, with numerous stems, scarcely branched. *Leaves* on long stalks, with 5, often 7, shallow lobes. *Fl.* pale lilac-coloured, several together, on axillary hairy stalks. *Pet.* usually above twice the length of the *calyx*, but in β they are only as long as that part, pale, and very inconspicuous. *Caps.* reticulated at the back, in both varieties, as in *M. sylvestris*.

M. microcarpa, *DeCand. n.* 37, sent by M. Thouin from the Paris garden, has prostrate stems, and appears to me but a slight variety of *rotundifolia*, with rather smaller flowers than usual.

3. *M. moschata*. Musk Mallow.

Radical leaves kidney-shaped, cut; the rest in 5 deep, pinnatifid, jagged segments. *Calyx* hairy; its outer leaves linear-lanceolate.

M. moschata. *Linn. Sp. Pl.* 971. *Willd. v. 3.* 790. *Fl. Br.* 742. *Engl. Bot. v. 11. t.* 754. *Curt. Lond. fasc. 4. t.* 50. *Sims in Curt. Mag. v. 49. t.* 2298. *Hook. Scot.* 209. *DeCand. Prodr. v. 1.* 432. *Fl. Dan. t.* 995. *Cavan. Diss.* 76. *t. 18. f.* 1.

M. n. 1072. *Hall. Hist. v. 2.* 23.

M. montana, sive *Alcea rotundifolia laciniata*. *Column. Ecphr.* 148. *t.* 147.

Alcea tenuifolia crispa. *Bauh. Hist. v. 2.* 1067. *f.* *Dill. in Raii Syn.* 253.

A. vulgaris. *Raii Syn. ed. 2.* 139. *ed. 3.* 252. All the synonyms, in both places, wrong.

A. folio rotundo laciniato. *Bauh. Pin.* 316. *Moris. v. 2.* 527. *sect. 5. t. 18. f. 4.*

In the grassy borders of fields, and by way sides, on a gravelly soil. Perennial. *July, August.*

Root tough and woody. *Herb* bright green, more or less rough with spreading, simple, not starry, hairs, unaccompanied by any short, dense, woolly pubescence, and exhaling a musky odour, especially in hot weather, or when drawn lightly through the hand. *Stems* about 2 feet high, leafy, round, but little branched. *Radical leaves* on long stalks, smaller, rounder, and less deeply lobed than the upper ones, soon withering away; *stem-leaves* divided to the very base into 5 pinnatifid lobes, all whose segments are linear, acute, channelled, and frequently undulated, usually in some degree hairy, seldom quite smooth. *Fl.* on long, axillary, simple stalks, rose-coloured, large and handsome. *Cal.* paler than the foliage, coarsely hairy or bristly; its 3 outer leaves linear-lanceolate. *Pet.* wedge-shaped, slightly cloven, jagged. *Caps.* clothed with dense silky hairs.

The white-flowered variety, figured by Dr. Sims, is kept for curiosity in gardens. It differs in no other respect from the, more beautiful, wild plant. The musky scent undoubtedly proceeds from the herbage, as described in *Fl. Br.* and *Engl. Bot.*, not from the flowers.

We scarcely ever find our great countryman, Ray, in an error, but in this instance he mistook the plant of the Bauhins, whose *Alcea vulgaris* is *Malva Alcea* of Linnæus, *Ehrh. Pl. Off.* 118, figured in Miller's *Icones*, *t.* 17, and in *Petiv. H. Brit. t. 39. f. 12.* Miller indeed, like Hudson, has erred in making both these plants natives of England, and many authors have either taken them for the same, or confounded their synonyms. *M. Alcea* may be clearly known by the broader and more flat segments of its *leaves*; somewhat starry, depressed pubescence, which is very dense and matted upon the *calyx*; but most essentially by the outer leaves of this part being ovate. The *stems* too are taller, and the plant has no smell of musk.

349. LAVATERA. Tree-mallow.

Linn. Gen. 354. *Juss.* 272. *Fl. Br.* 742. *DeCand. Prodr. v. 1.* 438. *Dill. Gen.* 155. *t.* 10. *Lam. t.* 582. *Gærtn. t.* 136.

Nat. Ord. see *n.* 347.

Cal. double, permanent; *outer* largest, of 1 leaf, in 3 broad, deep, spreading segments; *inner* of 1 leaf, divided half

way down into 5 more upright and acute lobes. *Pet.* 5, inversely heart-shaped, abrupt, flat, spreading, attached by their contracted claws to the tube of the stamens. *Filam.* numerous, capillary, united below into a cylindrical tube; separate in the upper part, both at the summit and sides. *Anth.* kidney-shaped. *Germ.* orbicular, depressed. *Style* cylindrical, with a conical permanent base. *Stigmas* rather numerous, 7—14, bristle-shaped, as long as the style. *Caps.* as many as the stigmas, compressed, either tumid, or concave and wrinkled, at the back, ranged in a circle round the columnar *receptacle*, which in some species is greatly dilated; each of 2 valves and 1 cell, finally deciduous. *Seeds* solitary, kidney-shaped.

Mostly arborescent, soft and densely downy; the pubescence in some instances starry. *Leaves* lobed, serrated, stalked. *Fl.* axillary, stalked, red or whitish.

1. *L. arborea*. Sea Tree-mallow.

Stem arboreous. Leaves downy, plaited, with seven angles. Stalks axillary, aggregate, single-flowered.

L. arborea. *Linn. Sp. Pl.* 972. *Willd. v. 3.* 793. *Fl. Br.* 742. *Engl. Bot. v. 26. t.* 1841. *Hook. Scot.* 209. *DeCand. Prodr. v. 1.* 439. *Cavan. Diss.* 86 and 282. *t.* 139. *f.* 2.

Malva arborea marina nostras. *Merr. Pin.* 75. *Raii Syn.* 252.

M. maritima arborea nostras. *Moris. v. 2.* 523. *Sibb. Scot. part 2.* 37.

On maritime rocks, but rare.

At Hurst castle, over against the isle of White; in Portland island; on Caldy island, in Carmarthen bay; and on the Basse island, Scotland. *Ray.* On Inch-Garvy, and Mykrie-Inch, in the Frith of Forth. *Sibbald.* In Cornwall and Devonshire. *Hudson.* Pembrokeshire. *Mr. Adams.*

Biennial. *July—October.*

Root much branched, running deep into the ground. *Stem* from 6 to 10 feet high, upright, strait, thick, scarred; simple below; branching into a leafy head; the *branches* besprinkled with fine, deflexed, compound, bristly hairs. *Leaves* of a greyish green, pliant, soft and downy, alternate, on long *footstalks*; their margin in 7 shallow crenate lobes. *Fl.* much like those of the common *Malva sylvestris*, in general appearance, but darker towards the middle, and the woolly *calyx* very different in structure, as described in the generic character. *Caps.* 7 or 8, reticulated, smooth.

This *Lavatera*, if allowed to scatter its seeds in a garden, will spring up for many successive years, and the young plants will now and then survive one or more mild winters; but having once blossomed it perishes.

Class XVII. DIADELPHIA.

Filaments combined ; in two sets.

Order I. HEXANDRIA. Stamens 6.

350. FUMARIA. *Cal.* of 2 leaves. *Cor.* ringent, prominent, and bearing honey, at the base. Each *filament* with three anthers.

Order II. OCTANDRIA. Stamens 8.

351. POLYGALA. Two segments of the *calyx* like wings. *Standard* of the *corolla* cylindrical. *Caps.* of 2 cells and 2 valves. *Seeds* solitary, crested.

Order III. DECANDRIA. Stamens 10.

* *Stam.* all connected at the base, the tube mostly split along its upper side.

352. SPARTIUM. *Filam.* all forming a simple tube. *Stigma* lateral, linear, hairy. *Legume* flat.

353. GENISTA. *Filam.* upwards in 2 sets. *Stigm.* terminal, somewhat capitate. *Legume* turgid. *Pistil* depressing the keel. *Standard* reflexed.

354. ULEX. *Cal.* of 2 leaves, nearly as long as the *legume*.

356. ANTHYLLIS. *Cal.* inflated, including the *legume*.

355. ONONIS. *Cal.* in 5 deep segments. *Legume* rhomboid, sessile. *Standard* striated.

** *Stigma*, or *style*, downy ; without the character of the former section.

358. OROBUS. *Style* linear, nearly cylindrical. *Stigma* along the upper side, downy.

357. PISUM. *Style* triangular. *Stigma* along the prominent upper angle, downy.
359. LATHYRUS. *Style* flattened vertically. *Stigma* along the dilated upper half of the style, downy.
360. VICIA. *Style* bearded in front, below the *stigma*.
361. ERVUM. *Stigma* capitate, all over downy.

*** *Legume more or less perfectly 2-celled; without the former characters.*

365. ASTRAGALUS. *Legume* tumid, of 2 longitudinal cells.

**** *Legume with scarcely more than 1 seed; without the former characters.*

366. TRIFOLIUM. *Legume* hardly longer than the calyx, with 1 seed, rarely more, deciduous, not bursting.

***** *Legume either jointed, or spiral; without the former characters.*

364. HEDYSARUM. *Legume* of 1 or more, compressed, close, single-seeded joints. *Keel* very obtuse.

362. ORNITHOPUS. *Legume* somewhat cylindrical, curved, of many close, single-seeded joints. *Keel* rounded.

363. HIPPOCREPIS. *Legume* compressed, partly membranous, incurved, with many curved joints; one suture with several notches.

368. MEDICAGO. *Legume* spiral, compressed, somewhat membranous. *Pistil* pressing the *keel* downwards.

***** *Legume of 1 cell, with numerous seeds; without the former characters.*

367. LOTUS. *Legume* cylindrical, spongy within. *Wings* converging at their upper edges. *Filam.* partly dilated.

DIADELPHIA HEXANDRIA.

350. FUMARIA. Fumitory.

Linn. Gen. 362. *Juss.* 237. *Fl. Br.* 748. *DeCand. Syst. v. 2.* 131.
Tourn. t. 237. *Lam. t.* 597. *Gærtn. t.* 115.

Corydalis. *DeCand. Syst. v. 2.* 113.

Capnoides. *Gærtn. t.* 115.

Nat. Ord. *Corydales.* *Linn.* 24. *Papaveraceæ.* *Juss.* 62.
Fumariaceæ. *DeCand. Syst.* 10.

Cal. inferior, of 2 opposite, erect, acute, small, membranous, deciduous leaves. *Cor.* oblong, tubular, ringent, with a prominent palate, closing the mouth : *pet.* 4, more or less combined ; *upper lip* flat, obtuse, notched, reflexed ; its base prominent, obtuse, constituting the *nectary* ; *lower lip* like the upper, sometimes with a similar prominent *nectary*, sometimes only keeled, at the base ; 2 interior *petals* alternate with the 2 lips, linear-oblong, slightly connected by their callous tips. *Filam.* 2, awl-shaped, flat, shorter than the corolla, 1 within each lip. *Anth.* roundish, 3 terminating each filament. *Germ.* superior, roundish or oblong, compressed, pointed. *Style* terminal, short. *Stigma* compressed, of 2 flat lobes. *Pod* roundish or oblong, of 1 cell, with 1 or many polished, crested *seeds*.

M. DeCandolle remarks that each prominence, at the base of the *corolla*, contains a nectariferous gland ; and that each of the lateral *anthers* has but one cell, there being therefore only 8 cells, or, properly speaking, 4 *anthers* in all. But it is easier to understand them as 2 double-celled, and 4 single-celled, *anthers*.

The *plants* are herbaceous, smooth, brittle, with annual or perennial *roots*, in the latter case sometimes tuberous. *Stems* simple or branched, mostly angular. *Leaves* stalked, variously compound. *Fl.* clustered, with partial *bracteas*. *Cor.* purple, red, yellow, or white, often partly green. *Seed-vessels* very various, insomuch that many botanists, in former times as well as in our days, have subdivided the genus by its fruit, and the Linnæan *Fumaria* makes a whole natural order of M. DeCandolle. Linnæus considered this as a genus in which one part of the fructification *wanders*, or is *irregular*, of which there doubtless are many instances ; but the present is an ex-

treme case of that kind, the *fruit* being so important a part, and so very different in some of the species.

* *Pod with many seeds. Nectary single. Corydalis. DeCand.*

1. *F. solida.* Solid Bulbous Fumitory.

Stem mostly simple, erect. Leaves twice ternate. Bracteas palmate, longer than each flower-stalk.

F. solida. Linn. *Ms. in Sp. Pl.* 983. *Fl. Br.* 748. *Engl. Bot.* v. 21. t. 1471. *Curt. Mag.* t. 231. *Ehrh. Beitr.* v. 6. 146.

F. bulbosa β and γ . Linn. *Sp. Pl.* 983.

F. intermedia. With 620. t. 29.

F. Halleri. Willd. *Sp. Pl.* v. 3. 863. *Fl. Dan.* t. 1224.

F. n. 349. *Hall. Hist.* v. 1. 151.

F. bulbosa, radice non cava, major. *Bauh. Pin.* 144.

F. tuberosa minor, radice non cavâ. *Moris.* v. 2. 261. *sect. 3. t.* 12. f. 8.

F. bulbosa, radice solidâ, calcari et folio cristato. *Bauh. Hist.* v. 3. p. 1. 205. f.

Corydalis bulbosa. *DeCand. Syst.* v. 2. 119.

Radix cava minor. *Ger. Em.* 1091. f. *Dod. Pempt.* 327. f.

Capnos fabaceâ radice. *Dalech. Hist.* 1294. f. *Park. Parad.* 279. f. 2.

Fabaceâ radice *Capnos altera.* *Lob. Obs.* 439. f.

In groves and thickets, but sparingly; perhaps a doubtful native.

About Kendal, and in other parts of Westmoreland; also at Perry Hall, near Birmingham. *Withering.* At Wickham, Hampshire.

Rev. T. Garnier.

Perennial. *April, May.*

Root orbicular, depressed, of several fleshy coats, but not hollow.

Stem solitary, erect, a little zigzag, angular, leafy, almost always simple, a span high, with a lanceolate sheath or two near the bottom. *Leaves* 2 or 3, scattered, on channelled footstalks, twice ternate, notched, glaucous. *Cluster* terminal, solitary, erect, of from 10 to 15 variegated, purplish, inodorous *flowers*, each with a long, ascending, blunt spur, and a slight pale prominence at the opposite side. *Bracteas* wedge-shaped, palmate, five-cleft, glaucous, solitary at the base of each partial stalk, which they exceed a little in length. *Cal.* very minute, rounded. *Pod* short, bursting at the base. *Seeds* several.

2. *F. lutea.* Yellow Fumitory.

Pods nearly cylindrical, shorter than their stalks. Stem angular, erect. Bracteas minute. Spur short, rounded.

F. lutea. Linn. *Mant.* 2. 258. *Willd. Sp. Pl.* v. 3. 865. *Fl. Br.* 749. *Engl. Bot.* v. 9. t. 588. *Bauh. Pin.* 143. *Mill. Ic.* 91. t. 136. f. 1.

Mill. Illustr. t. 60. Br. in Ait. H. Kew. ed. 2. v. 4. 240. Ger. Em. 1088. f.

F. n. 347. Hall. Hist. v. 1. 150.

F. capnoides. With. 620.

F. corydalis. Matth. Valgr. v. 2. 503. f. Camer. Epit. 892. f.

F. lutea montana. Lob. Obs. 438. f. Ic. 758. f. Dalech. Hist. 1293. f. Moris. v. 2. 260. sect. 3. t. 12. f. 4; bad.

F. tingitana, radice fibrosâ, perennis, &c. Pluk. Almag. 162. Phyt. t. 90. f. 2.

Pseudo-Fumaria, flore luteo. Riv. Tetrap. Irr. t. 74. f.

Capnoides lutea. Gærtn. v. 2. 163. t. 115.

Corydalis capnoides β. DeCand. Syst. v. 2. 126.

On old walls; perhaps naturalized.

Near Castleton, Derbyshire, far from any garden; Mr. Howard, on the authority of Mr. Robson. *With.* Near Fountain's Hall, by Fountain's Abbey, Yorkshire. *Mr. W. Brunton, jun.*

Perennial. *May.*

Root of numerous fibres. *Stem* erect, a foot high, and, like the *footstalks*, triangular, brittle, juicy, reddish and shining. *Leaves* thrice ternate, of a bright, rather glaucous, green; leaflets wedge-shaped, with rounded lobes. *Fl.* in a solitary, terminal, upright cluster, scentless, lemon-coloured, with deep-yellow lips. *Bractees* very small, ovate or awl-shaped, serrated, acute, much shorter than the *flower-stalks*. *Calyx-leaves* ovate, or lanceolate, with blunt points, membranous, soon deciduous. *Spur* of the *corolla* rounded, incurved, very much shorter than the stalk, as is likewise the rather compressed and quadrangular *pod*.

Linnæus at first confounded this with his *F. capnoides*, but subsequently took great pains to distinguish the *lutea* and its synonyms. The true *capnoides*, preserved in his herbarium from the Upsal garden, and apparently not known to the learned Prof. DeCandolle, is certainly distinct, having large, leafy, deeply cut, stalked *bractees*, paler *flowers*, an awl-shaped *spur* as long as the rest of the *corolla*, *pods* twice or thrice as long as the *flower-stalks*, and according to Linnæus, who cultivated it, an annual *root*, which Willdenow confirms; but the latter misapplies Haller's synonym.

3. *F. claviculata*. White Climbing Fumitory.

Pods lanceolate, undulated. *Stem* climbing. *Footstalks* ending in branched tendrils.

F. claviculata. Linn. Sp. Pl. 985. Willd. v. 3. 869. Fl. Br. 752. Engl. Bot. v. 2. t. 103. Hook. Scot. 211. Fl. Dan. t. 340.

F. alba latifolia. Raii Syn. 335.

F. alba latifolia claviculata. Ger. Em. 1088. f.

F. claviculis donata. Bauh. Pin. 143. Moris. v. 2. 260. sect. 3. t. 12. f. 3.

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Capnos alba latifolia. Lob. Obs. 438.f. Ic. 758.f. Dalech. Hist. 1295.f.

Corydalis claviculata. DeCand. Syst. v. 2. 128. Grev. Edin. 153.

In bushy, shady, rather hilly situations, on a gravelly, stony, or sandy soil.

Annual. June, July.

Root slender. *Stems* one or more, delicate and tender, flattened on one side, branched, leafy, from 1 to 3 or 4 feet high, climbing upon other plants, by means of branched *tendrils* terminating their *footstalks*. *Leaves* pinnate; then pedate or ternate; *leaflets* elliptical, entire, glaucous; paler beneath. *Clusters* opposite to each leaf, stalked, rather dense, of several elegant white *flowers*, variegated with blue or grey, each on a short partial stalk, scarcely so long as its accompanying small *bractea*. *Cal.* toothed. *Spur* rounded, very short. *Pod.* lanceolate, acute, undulated at each side, containing 3 or 4 *seeds*.

** *Pod* single-seeded. *Nectary* single. Fumaria. DeCand.

4. *F. officinalis.* Common Fumitory.

Cluster rather lax. Pods single-seeded, globose, abrupt, on upright stalks, twice as long as the bracteas. Stem spreading. Segments of the leaflets lanceolate.

F. officinalis. Linn. Sp. Pl. 984. Willd. v. 3. 867. Fl. Br. 750. Engl. Bot. v. 9. t. 589. Curt. Lond. fasc. 2. t. 52. Mart. Rust. t. 68. Woodv. t. 88. Mill. Ic. 91. t. 136. f. 2; bad. Hook. Scot. 210. DeCand. Syst. v. 2. 134. Fl. Dan. t. 940. Dreves Bilderb. t. 16. Bull. Fr. t. 189.

F. n. 346. Hall. Hist. v. 1. 149.

F. vulgaris. Raii Syn. 204. Bauh. Hist. v. 3. p. 1. 201. f.

F. purpurea. Ger. Em. 1088. f.

Fumaria. Trag. Hist. 110. f. Fuchs. Hist. 338. f. Matth. Valgr. 501. f. Camer. Epit. 890. f. Dalech. Hist. 1292. f. Riv. Tetrap. Irr. t. 1.

Fumus terræ. Brunf. Herb. v. 1. 99. f.

Capnos. Lob. Obs. 437. f. Ic. 757. f.

In cultivated ground, and about hedges, common.

Annual. May—August.

Root tapering. *Herb* glaucous. *Stem* much branched, spreading, often recumbent, leafy, angular, various in luxuriance. *Leaves* mostly alternate, twice or thrice pinnate; leaflets wedge-shaped, with flat lanceolate segments. *Clusters* opposite to the leaves, stalked, erect, many-flowered, rather lax. *Bracteas* lanceolate; acute, not half the length of the *flower-stalks*, especially when in fruit. *Fl.* rose-coloured, or pale red, deep red at the summit, with a green keel to the upper and under *petals*. *Spur* very short, rounded. *Cal.* coloured, toothed, deciduous. *Pod* globose, a little compressed, abrupt or notched at the extremity,

so as to be inversely heart-shaped, as Curtis first, I believe, remarked; its surface smooth; valves united, not splitting asunder. Seed solitary, globose.

Dr. Cullen recommends the expressed juice of this herb, in a dose of 2 ounces twice a day, to cleanse the skin from leprous disorders. The same great physician thought it useful as a tonic, wherever bitter medicines are advisable; but of these we have many doubtless more powerful.

5. *F. parviflora*. Small-flowered Fumitory.

Cluster lax. Pods single-seeded, globose, pointed. Stem spreading. Segments of the leaflets linear, channelled.

F. parviflora. Lam. Dict. v. 2. 567. Willd. Sp. Pl. v. 3. 868. Fl. Br. 750. Engl. Bot. v. 9. t. 590. DeCand. Syst. v. 2. 136.

F. spicata β. Linn. Syst. Veg. ed. 14. 637.

F. tenuifolia. Sym. Syn. 200; with the syn. of *F. spicata*.

F. foliis tenuissimis, floribus albis, circa Monspelium, nascens. Vaill. Par. 56. t. 10. f. 5.

F. tenuifolia, flore niveo. Besl. Hort. Eyst. vern. ord. 1. t. 11. f. 3.

F. exilis romana. Bocc. Mus. 107. t. 81.

In fields in the south of England.

About Woldham, near Rochester. Mr. Jacob Rayer. Near Epsom. Mr. T. F. Forster. Probably Gerard gathered it between Charlton and Greenwich, though his figure represents *F. spicata*.

Annual. August, September.

Herb like the last, but rather smaller in every part. Segments of the leaves very narrow, linear and channelled, not at all dilated, all uniform. Bractees longer in proportion to the flower-stalks, rather awl-shaped. Fl. not more than half the size of *F. officinalis*, pale red, occasionally white; tips of the inner petals purple. Pod globose with a point, not abrupt, or notched. This is doubtless a very distinct species from the foregoing, and, as Prof. DeCandolle remarks, has no relationship to *F. spicata*, whose terminal spikes, and oval, flat, thick-edged, dotted pod, are abundantly characteristic.

6. *F. capreolata*. Ramping Fumitory.

Cluster rather lax. Pods single-seeded, globose. Stem climbing by means of the twisting footstalks. Leaflets wedge-shaped, lobed.

F. capreolata. Linn. Sp. Pl. ed. 1. 701. ed. 2. 985. Willd. v. 3. 868. Fl. Br. 751. Engl. Bot. v. 14. t. 943. Curt. Lond. fasc. 6. t. 47. Dicks. H. Sicc. fasc. 9. 9. With. 621. t. 30. Hook. Scot. 210. DeCand. Syst. v. 2. 133? Ehrh. Herb. 78.

F. officinalis β. Huds. 309.

F. media. DeCand. Syst. v. 2. 134?

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F. major scandens, flore pallidior. *Raii Syn.* 204.

F. major, floribus dilutè purpureis. *Magnol. Monsp.* 100. *Vaill. Par.* 56. *t.* 10. *f.* 4.

F. viticulis et capreolis plantis vicinis adhærens. *Bauh. Pin.* 143.

F. Phragmites. *Dalech. Hist.* 1292. *f.*

In cultivated fields, not common.

Sparingly at Edmonton, and a few other places near London ; more plentifully about Barnstaple, Devonshire, and elsewhere.

Curtis. About Battersea, in fields and garden grounds. *Mr.*

Sowerby. In Sussex. *Mr. Borrer.* Very abundant about Liverpool.

Annual. *June—September.*

Most like *F. officinalis*, but larger in every part ; the *leaves* less glaucous ; their tendrils twisting round other plants, by which the branching *stem* climbs to the height of 3 or 4 feet ; and the *flowers* are on the whole paler, though the tip of each *petal* is deep red ; the *Pods* are not abrupt, or inversely heart-shaped, but more globose, with a slight depression at each side of the place of the *style*, which is deciduous, like that of all the single-seeded *Fumariæ*. *Dr. Withering's* figure erroneously represents *tendrils* distinct from the *footstalks*.

Prof. DeCandolle distinguishes our plant from what he esteems the real *F. capreolata* of *Linnæus*, of which as he understands it, a plate is given in his excellent *Icones*, *t.* 34. But in this plate all the *fruit-stalks* are peculiarly straight and upright, which is the character of his *F. media*. In our *capreolata* they become more or less recurved as the *Pods* ripen, which *DeCandolle* gives as a mark of his *capreolata*. The *Linnæan* herbarium here lends us no assistance, *Linnæus* having adopted his *F. capreolata* from other authors, without possessing a specimen, if he ever saw one. Our plant however is that of his pupil *Ehrhart*, and of *Jacquin*, from each of whom I have specimens. The *calyx-leaves* in all my specimens are nearly as entire as in *DeCandolle's* figure ; being much less toothed than in *Curtis's*.

The synonyms of the various *Fumariæ* in old authors might afford materials for an ample dissertation.



DIADELPHIA OCTANDRIA.

351. POLYGALA. Milkwort.

Linn. Gen. 364. *Juss.* 99. *Fl. Br.* 752. *DeCand. Prodr.* v. 1. 321.

Tourn. t. 79. *Lam. t.* 598. *Gærtn. t.* 62.

Nat. Ord. *Lomentaceæ*. Linn. 33. *Pediculares*. Juss. 35.
Polygalææ. Juss. Ann. du Mus. v. 14. 386. DeCand.
 Prodr. 18.

Cal. inferior, of 5 leaves, imbricated in the bud; 3 outer ones smallest, nearly equal, ovate, acute, 1 of them uppermost; 2 inner ones much larger, like a pair of wings, coloured, veiny, ovate, finally converging and fading; all permanent. *Pet.* various in number, combined with the filaments by their claws; limb of the uppermost deeply divided; lowermost 1 or 2, keel-shaped, generally crowned with more or less of a many-cleft, crested appendage. *Filam.* all united at the bottom and attached to the corolla; divided above into 2 sets, of 4 each. *Anth.* 8, ascending, tubular, each of 1 cell, opening at the summit. *Germ.* superior, roundish. *Style* club-shaped, straight. *Stigma* of 2 unequal lips, concave. *Caps.* orbicular, or inversely heart-shaped, compressed, of 2 valves and 2 cells, the partition from the centre of each valve. *Seeds* solitary, pendulous, oval, downy, crested at the scar.

A very large genus, herbaceous or shrubby, with simple, entire, alternate, or opposite, or whorled, generally smooth *leaves*. *Fl.* racemose, sometimes very beautiful, blue, crimson or yellowish. DeCandolle enumerates above 160 species, from all parts of the world. One only is British.

1. *P. vulgaris*. Common Milkwort.

Flowers crested. Bractæas three, at the base of each flower-stalk, deciduous. Wings about equal to the corolla. Stems ascending, simple, herbaceous. Leaves linear-lanceolate.

P. vulgaris. Linn. *Sp. Pl.* 986. Willd. v. 3. 873. *Fl. Br.* 752. *Engl. Bot. v. 2. t. 76.* Hook. *Scot.* 211. DeCand. *Prodr. v. 1.* 324. *Fl. Dan. t. 516.* Bull. *Fr.* 177. Bauh. *Pin.* 215. Vaill. *Par.* 160, 161. t. 32. f. 1. Ehrh. *Pl. Off.* 358.

P. n. 344. Hall. *Hist. v. 1.* 148.

Polygala. Raii *Syn.* *287. Ger. *Em.* 563. f. 3, 4; and 564. f. 5.

Polygalon. Trag. *Hist.* 571. f.

Onobrychis secunda. Dalech. *Hist.* 491. f.

In gravelly and heathy pastures, very common.

Perennial. June, July.

Root tough and woody. *Herb* smooth, of a dark shining green, with several procumbent, or partly ascending, simple, angular, leafy stems, from 3 to 6 inches high. *Leaves* scattered, nearly sessile; the lower ones shortest, broadest, and most crowded.

Fl. in a simple terminal *cluster* usually blue, but frequently pink, white, or purple; always marked with green lines; the permanent *calyx* turning green, and remaining long, with its closed wings, sheltering the ripening *pod*.

It is hard to say why this plant obtained the name of *Polygala*, or Milkwort; and indeed that name has been given by some authors to several truly papilionaceous herbs or shrubs, more deserving the reputation of yielding good food for cows. Our *Polygala*, like some other European species of the same genus, is bitter, and when given in infusion, promotes expectoration, and is good for a catarrhus cough.

Reports have arisen of *P. amara* being found in England; but the specimens I have seen were no other than the *vulgaris*.

DIADELPHIA DECANDRIA.

This order is entirely natural, comprehending the *Papilionaceæ* tribe, except such as have perfectly distinct, firm, awl-shaped *stamens*, which are therefore placed in the 10th class; but of these we have none in Britain.

Papilionaceæ. Linn. 32. *Leguminosæ*. Juss. 93; *sect.* 5—8. *Flowers* all complete and perfect, except in the *petals* of a very few exotic species.

Calyx inferior, of 1 leaf, tubular, rarely of 2 leaves, withering; obtuse and rather tumid on the upper side at the base, where the honey is lodged; its margin in 5 unequal, more or less deep, teeth or segments; the lower tooth longest; 2 upper shortest and most distant.

Corolla papilionaceous, unequal; petals characterized as follows.

Standard single, largest, overshadowing the rest; its claw flattish, inserted into the upper margin of the receptacle; the part beyond the calyx roundish, or obovate, scarcely ever divided, marked with a longitudinal central fold or keel, and depressed at each side, closely embracing the petals beneath, by means of 2 prominences towards its claw, which are hollow at the upper side. *Wings* 2, equal, lateral, oblong, attached by their claws to the receptacle; their upper margins parallel and converging, each terminating behind in a tooth or spur.

Keel of 1 petal, or more frequently of 2 combined, with a double claw, boat-shaped, compressed, with a tooth or prominence, on each side, at the base; either rounded or rectangular in front.

All the *petals* expand in bright warm weather, and close in darkness, cold, or damp.

Stamens diadelphous. *Filaments* 2, lodged in the keel, both membranous and flattened, but usually differing in width, rarely equal; 1 embracing the pistil beneath; the other lying upon its upper edge; the former keeled, divided at the summit into 9 slender awl-shaped parts; the latter awl-shaped, simple, slender. *Anthers* small, equal, oblong or roundish; 9 on the broader filament; 1 on the narrower. In some instances there is but a single compressed folded *filament*, terminating in 10 equally-divided anther-bearing segments, various in length; in others the 2 unequal *filaments* are either united or distinct at the base. The latter only are strictly diadelphous; but the difference is of little moment, and not easily discernible.

Pistil solitary, superior. *Germen* sessile or stalked, oblong or roundish, compressed, the length of the undivided part of the lower *filament*, by which it is embraced. *Style* terminal, awl-shaped, ascending, the length of the separate part of the filaments, or longer. *Stigma* downy, terminal or longitudinal, capitate, or linear, or dilated.

Legume oblong or roundish, compressed or inflated; either of 2 continued *valves*, and 1, rarely imperfectly divided, *cell*, with a longitudinal suture above and below, the former bearing a linear double *receptacle*; or consisting of 1 or more closed, single-seeded joints.

Seeds several, rarely solitary, roundish, tumid, pendulous, on slender alternate stalks, from the upper suture of the legume only, where it splits asunder, having one *receptacle* to each valve. Separate *albumen* none. *Cotyledons* either raised above ground in germination, becoming leafy, or subterraneous and decaying.

The habit is either herbaceous or shrubby, annual or perennial. *Wood* hard. *Leaves* pinnate; either abruptly, with more or less of a tendril; or with an odd leaflet; or ternate; or binate; rarely simple. *Stipulas* in pairs, various and remarkable. *Inflorescence* various. *Fl.* handsome, often fragrant. *Herbage* wholesome for cattle; *seeds*, when dressed, for mankind. There is no noxious British plant, nor scarcely an exotic one in the whole order.

352. SPARTIUM. Broom.

Linn. Gen. 368. *Fl. Br.* 753. *Gærtn. t.* 153.*Genista. Juss.* 353. *Lam. t.* 619. *f.* 1. *Tourn. t.* 411.

Cal. cup-shaped, two-lipped; lips coloured, abrupt; the upper with 2, lower with 3, very slight teeth. *Cor.* of 5 petals; standard inversely heart-shaped, very large, entirely reflexed; wings ovate-oblong, shorter than the standard, connected below with the filaments; keel of 2 petals, lanceolate, oblong, abrupt, longer than the wings, attached to the filaments, and connected together at the lower edges by entangled hairs. *Filam.* 10, all united into one undivided tube, sometimes slit along the upper side, unequal, thread-shaped, the lowermost gradually longest. *Anth.* versatile, oblong. *Germ.* oblong, compressed, hairy. *Style* awl-shaped, curved, or contorted, upwards. *Stigma* oblong, hairy, running along the upper edge of the blunt style. *Legume* much compressed, oblong, obtuse, of 2 elastic valves and 1 cell, subtended by the permanent calyx, and tipped with the twisted style, which is at length deciduous. *Seeds* several, roundish-kidney-shaped, crested.

Branched, often thorny, *shrubs*, with ternate, sometimes partly simple, smallish *leaves*, and large, handsome, yellow *flowers*, on lateral simple stalks. *Legumes* pendulous. *Seeds* from 4 to about 15.

Lamarck has suggested that *Spartium* of Linnæus is not generically distinct from *Genista*, and he united them in his *Flore Française* 614, only referring a few species of each to *Cytisus*. Jussieu avowedly follows him, not without some doubts, and a suggestion that the single-seeded species might properly form a genus by themselves, after the opinion of Tournefort, who restricted the name of *Spartium* to these only. I would rather take as the type of this genus our *S. scoparium*, and some other species which, along with it, make a very natural genus, in character and habit, and from which Linnæus drew up his generic description. These are clearly distinct from *Genista*, whatever may be thought of the rest. Those who have studied this natural order well know the importance of the *stigma* and the *legume* in their generic distinctions.

1. *S. scoparium*. Common Broom.

Leaves ternate, or solitary. Branches angular, without

thorns. Filaments all in one set at the base. Legume fringed.

S. scoparium. Linn. *Sp. Pl.* 996. Willd. *v.* 3. 933. *Fl. Br.* 753. *Engl. Bot.* *v.* 19. *t.* 1339. *Curt. Lond. fasc.* 5. *t.* 52. *Woodv. t.* 89. *Fl. Dan. t.* 313. *Dreves Bilderb. t.* 48. *Ehrh. Arb.* 56.

S. n. 354. *Hall. Hist. v.* 1. 154.

Genista. Ger. *Em.* 1311. *f.* Fuchs. *Hist.* 218. *f.* Camer. *Epit.* 950. *f.* *Trag. Hist.* 961. *f.* Dod. *Pempt.* 761. *f.* Riv. *Tetrap. Irr. t.* 65. *f.* 1.

G. angulosa trifolia. Raii *Syn.* 474.

G. scoparia. Lam. *Franç.* 619. Hook. *Scot.* 211. Lob. *Ic. v.* 2. 89. *f.*

In dry gravelly thickets and fields, abundantly.

Shrub. *May, June.*

A large bushy shrub, with copious, long, straight, angular, dark green, smooth, tough branches. Leaves deciduous, scattered, stalked, ternate; the upper ones generally simple; leaflets uniform, obovate, obtuse, entire; silky when young. *Fl.* axillary, solitary or in pairs, on simple stalks, longer than the leaves, large and handsome, of a deep golden yellow; sometimes tinged with orange; more rarely of a uniform pale lemon-colour. The swelling germen soon splits the tube of the filaments. Legume brown, flat, above an inch long, nearly smooth at the sides, but fringed with harsh hairs at each margin. Seeds about 15 or 16.

A decoction of the young tops of this shrub, powerfully purgative and diuretic, is a rustic remedy for dropsies, which regular practitioners have not altogether despised.

353. GENISTA. Green-weed.

Linn. Gen. 368. *Juss.* 353. *Fl. Br.* 754. *Lam. t.* 619.

Cal. tubular, two-lipped; upper lip in 2 deep segments; lower in 3 more slight ones, nearly equal. *Cor.* of 5 petals; standard oblong, undivided, ascending, very distant from the rest; wings elliptic-oblong, spreading, keel of 2 petals, lanceolate-oblong, bluntish, slightly cohering by their lower edges. *Filam.* 10, in 2 sets, though more or less united at the bottom; the odd one awl-shaped, separated more than half way down. *Anth.* small, roundish. *Germ.* oblong, compressed. *Style* awl-shaped, ascending, deciduous. *Stigma* terminal, simple, or slightly capitate. *Legume* turgid, somewhat compressed, oblong, or roundish, obliquely pointed, of 1 cell and 2 concave valves, subtended by the permanent calyx, and tipped with the permanent curved base of the style. *Seeds* several, roundish, or somewhat quadrangular.

Shrubs of humble growth; sometimes armed with strong, simple or compound, thorns; branches in some winged. *Leaves* alternate, simple, entire. *Fl.* small, yellow, axillary, solitary. The supposed species with ternate *leaves* appear to me doubtful as to their genus. We have none of them in Britain.

1. *G. tinctoria*. Dyer's Green-weed. Wood-waxen.

Leaves lanceolate, smooth. Branches round, striated, erect, without thorns.

G. tinctoria. Linn. *Sp. Pl.* 998. Willd. v. 3. 939. *Fl. Br.* 754. *Engl. Bot.* v. 1. t. 44. Hook. *Scot.* 211. *Fl. Dan.* t. 526. *Dod. Pempt.* 763. f. *Ehrh. Arb.* 27.

G. n. 350. *Hall. Hist.* v. 1. 152.

Genistella. Riv. *Tetrap. Irr.* t. 67. f. 1.

G. tinctoria. Raii *Syn.* 474. *Ger. Em.* 1316. f.

G. infectoria vulgi. Lob. *Ik.* v. 2. 89. f.

Tinctorius flos. Fuchs. *Hist.* 808. f. *Ik.* 467. f. Dalech. *Hist.* 175. f. Bauh. *Hist.* v. 1. p. 2. 391. f.

In pastures, thickets, and the dry borders of fields.

Shrub. July, August.

Root woody, creeping widely. *Stems* depressed, with numerous ascending, rarely recumbent, straight, furrowed, leafy, smooth branches. *Leaves* scattered, nearly sessile, elliptic-lanceolate, convex, of a deep shining green, a little hairy at the edges and midrib, at least while young. *Fl.* on short axillary stalks, crowded about the summits of the branches, with a pair of small awl-shaped *bracteas* a little below the base of the deeply cut, smooth, angular *calyx*. *Pet.* of a uniform bright yellow. Odd *stamen* very deeply separated. *Legume* nearly cylindrical, with numerous seeds.

The whole plant affords the dyer a good yellow colour, and with Woad a good green. Ray says the milk of cows feeding upon it is rendered bitter, which flavour is communicated to butter and cheese.

2. *G. pilosa*. Hairy Green-weed.

Leaves obovate-lanceolate, obtuse; hairy beneath. Stem tuberculated, prostrate, without thorns. Calyx and flower-stalks silky.

G. pilosa. Linn. *Sp. Pl.* 999. Willd. v. 3. 941. *Fl. Br.* 755. *Engl. Bot.* v. 3. t. 208. Rose *Elem. append.* 452. t. 3. Dicks. *H. Sicc. fasc.* 16. 16. Jacq. *Austr.* t. 208. *Fl. Dan.* t. 1225; too upright, *Ehrh. Arb.* 66.

G. n. 351. *Hall. Hist.* v. 1. 153.

G. minima. Dalech. *Hist.* 173. f.

Genistella pilosa. Bauh. Hist. v. 1. p. 2. 393. f.

Chamægenista prima. Cluss. Pann. 49. f. 50. Hist. v. 1. 103. f.

Ch. pannonica. Ger. Em. 1313. f.

On dry elevated sandy downs or heaths.

On high sandy ground about Bury, Suffolk. Mr. Dickson. About Fornham, on the north side of Bury; also on soap rocks, near the Lizard Point, Cornwall. Sir T. G. Cullum, Bart. At the foot of Cader Idris, North Wales; Mr. Griffith. With.

Shrub. May, and again in September.

Root long and woody. Stems numerous, much branched, scarred, prostrate, round, with abundance of leafy, angular, or striated, somewhat silky, young branches, so buried among grass and other plants, that, when out of flower, the plant is difficult to find. Leaves small, simple, scattered, with axillary tufts of smaller ones, all recurved, obovate-lanceolate, rigid; dark-green and smooth above; finely silky underneath. Fl. small, bright yellow, axillary and solitary, crowded about the tops of the branches, each on a silky stalk. Cal. rather short, silky, as well as the back of the standard. Legume oblong, rather compressed, hairy. Seeds 3 or 4, seldom all perfected.

3. *G. anglica.* Needle Green-weed. Petty Whin.

Thorns nearly simple. Flowering branches unarmed. Leaves ovate-lanceolate.

G. anglica. Linn. Sp. Pl. 999. Willd. v. 3. 943. Fl. Br. 756. Engl. Bot. v. 2. t. 132. Hook. Scot. 212. Fl. Dan. t. 619. Ehrh. Arb. 37.

G. minor aspalathoides, sive *Genista spinosa anglica.* Bauh. Pin. 395. Prodr. 157. Raii Syn. 475.

G. aculeata. Ger. Em. 1320. f.

Genistella. Dod. Pempt. 760. f. Fuchs. Hist. 220. f. Ic. 125. f.

G. minor aspalathoides. Bauh. Hist. v. 1. p. 2. 401. f. 402.

On moist boggy heaths, frequent.

Shrub. May, June.

Roots woody, long and creeping. Stems about a foot high, ascending, woody, round, alternately branched, the leafy branches of the present year becoming next season permanent, woody, sharp, prominent, awl-shaped thorns, almost always perfectly simple, rarely bearing a small thorn or two near the base. Leaves numerous, small, scattered, ovate, acute, entire, smooth, rather glaucous, on short stalks, deciduous. Fl. solitary, in the bosoms of several of the uppermost leaves, small, bright, lemon-coloured; the standard of a deeper yellow, turning green in drying, as well as the wings. Keel remarkably long. Cal. smooth, sharply toothed. Legume smooth, somewhat oval, turgid, beaked with the awl-shaped recurved base of the style. Seeds 10 or 12.

I have restored the synonym of Fuchsius, first quoted by Dr. Stokes, and which I had considered as belonging to *G. germa-*

nica; but the thorns of the latter are repeatedly and plentifully compound.

354. ULEX. Furze.

Linn. Gen. 379. *Juss.* 352. *Fl. Br.* 756. *Lam. t.* 621. *Gærtn. t.* 151.

Genista-Spartium. Tourn. t. 412.

Cal. of 2 ovate-oblong, concave, equal, coloured, permanent leaves, rather shorter than the keel; the upper with 2 small teeth; lower with 3. *Cor.* of 5 petals; standard ovate, cloven, ascending; wings oblong, obtuse, rather shorter than the standard; keel of 2 petals, straight, obtuse, cohering by their lower edges. *Filam.* in 2 sets, both united at the base; one in 9 awl-shaped segments; the other simple, awl-shaped, separate for more than half its length. *Anth.* roundish, of 2 lobes. *Germ.* oblong, nearly cylindrical, hairy. *Style* awl-shaped, curved upwards. *Stigma* small, obtuse. *Legume* oblong, turgid, straight, scarcely longer than the calyx, of 1 cell, and 2 rigid, elastic, concave valves. *Seeds* from 6 to 8, polished, somewhat angular, slightly compressed, with a tumid cloven crest.

Stem woody, bushy, with abundance of large, compound, very sharp, alternate thorns. *Leaves* few, small, simple. *Fl.* axillary, bright yellow.

1. *U. europæus*. Common Furze, Whin or Gorse.

Teeth of the calyx obsolete, converging. Bractæas ovate, lax. Branches erect.

Ulex europæus. Linn. Sp. Pl. 1045. *Willd. v.* 3. 969. *Fl. Br.* 756. *Engl. Bot. v.* 11. *t.* 742. *Forst. in Sym. Syn.* 160. *Hook. Scot.* 212. *Fl. Dan. t.* 608. *Ehrh. Arb.* 86.

U. grandiflorus. Pourret in Act. Tolos. v. 3. 333.

Genista spinosa vulgaris. Raii Syn. 475. *Ger. Em.* 1319. *f.*

G. spinosa major, longioribus aculeis. Bauh. Pin. 394.

G. spinosa. Dod. Pempt. 759. *f.*

Genistellæ spinosæ affinis, Nepa quibusdam. Bauh. Hist. v. 1. *p.* 2. 400. *f.*

Scorpius primus. Clus. Hist. v. 1. 106. *f.*

S. alter, sive Genista spinosa. Dalech. Hist. 164. *f.*

On sandy or gravelly heaths and commons abundantly.

Shrub. *May*; and occasionally at all seasons.

Stem from 2 to 5 feet high, with innumerable, dense, upright, green, roughish, furrowed, branches, spinous at the ends, and beset with large, compound, spreading, striated, green, smoother,

permanent *thorns*. *Leaves* few, scattered, small, awl-shaped, entire, spinous-pointed, deciduous. *Fl.* large, solitary or in pairs, of a bright golden yellow, with a very peculiar oppressive scent. *Bracteas* 2 at the base of the calyx, small, ovate, lax or spreading, densely downy, as well as the simple *flower-stalks*, and outside of the *calyx*, the teeth of which cohere so closely as to escape a casual view. *Legumes* downy, bursting elastically in dry hot weather, with a crackling noise, and scattering their *seeds* extensively.

The wood is very hard. The chief use of this shrub is to afford firing for the poor. Its full growth is attained in 4 years, and it ought not to be cut more frequently.

2. *U. nanus*. Dwarf Furze.

Teeth of the calyx lanceolate, spreading. *Bracteas* minute, close-pressed. Branches reclining.

U. nanus. Forst. in *Sym. Syn.* 160. *Tonbr.* 83. *Fl. Br.* 757. *Engl. Bot.* v. 11. t. 743. *Willd.* v. 3. 969.

U. minor. Roth *Catal.* v. 1. 83, not 33.

U. europæus β. *Linn. Sp. Pl.* 1045. *Huds.* 312.

Genista spinosa minor. Raii *Syn.* 475.

G. spinosa major brevibus aculeis. Bauh. *Pin.* 394.

G. aculeata minor, sive *Nepa Theophrasti*. Ger. *Em.* 1321. f.

Nepa apud Theophrasti. Lob. *Ic.* 788. f.

On dry elevated heaths, less common than the preceding.

Shrub. August—October.

This, as Dr. Roth justly observes, is in every part but half the size of the last. The *branches* are more recumbent; the flowering ones more cylindrical and elongated. *Leaves* awl-shaped, hairy. *Fl.* scarcely half the size of *U. europæus*, paler, with a more yellow *calyx*, and narrower *standard*. The most essential characters however consist in the more distinct and spreading *calyx-teeth*, and the minute, rounded, close-pressed, often hardly discernible *bracteas*. These marks are conclusive and constant; and this species, which blossoms chiefly in autumn, may readily be known at a distance from the more common one, however starved, or injured by too frequent cutting, the latter may happen to be.

355. ONONIS. Rest-harrow.

Linn. Gen. 370. *Juss.* 354. *Fl. Br.* 758. *Lam. t.* 616. *Gærtn.* t. 154.

Anonis. *Tourn. t.* 229.

Cal. tubular, in 5 rather deep, linear, pointed segments, slightly curved upwards; the lower one longest, subtending the keel. *Cor.* of 5 petals; standard larger than the rest,

slightly heart-shaped, striated with numerous ribs, keeled and compressed at the back, depressed at the sides; wings obovate, but half the length of the standard; keel of 2 converging petals, rather abrupt, pointed, a little longer than the wings. *Filam.* 10, united into one cylinder, splitting along the upper edge. *Anth.* roundish. *Germ.* oblong. *Style* cylindrical, ascending. *Stigma* small, obtuse. *Legume* oblong-rhomboid, turgid, sessile, scarcely longer than the calyx, of 1 cell, and 2 rigid, elastic valves. *Seeds* few, kidney-shaped, roughish.

A numerous Europæan or African genus, herbaceous or shrubby, occasionally spinous; with sharply toothed, mostly ternate, *leaves*; large *stipulas*; and handsome, red or yellowish, stalked *flowers*. *Herbage* mostly glutinous, and often fetid.

1. *O. arvensis*. Common Rest-harrow, or Cammock.

Stem hairy. Branches at length spinous. Flowers mostly solitary. Leaves generally simple; entire towards their base.

O. arvensis. *Linn. Syst. Nat. ed. 12. v. 2. 478. Syst. Veg. ed. 14. 651. Lightf. 386. Fl. Br. 758. Engl. Bot. v. 10. t. 682. Hook. Scot. 212.*

Anonis n. 356. *Hall. Hist. v. 1. 155.*

α. Ononis inermis α. Huds. 312.

O. arvensis. With. 627. Sibth. 220. Abbot 155.

Anonis non spinosa purpurea. Raii Syn. 332; excluding the reference to *J. Bauhin*, which belongs to *O. hircina* of *Jacquin*.

β. Ononis spinosa β. Linn. Sp. Pl. 1006.

O. spinosa. Linn. Syst. Veg. ed. 14. 651. Willd. v. 3. 989. Huds. 312. With. 627. Sibth. 220. Abbot 155. Mart. Rust. t. 129. Fl. Dan. t. 783. Bull. Fr. t. 105.

Ononis. Dalech. Hist. 448. f. Matth. Valgr. v. 2. 37. f. Camer. Epit. 443. f.

Anonis. Fuchs. Hist. 60. f. Ic. 35. f. Riv. Tetrap. Irr. t. 68.

A. spinosa, flore purpureo. Raii Syn. 332.

A. sive Resta bovis. Ger. Em. 1322. f.

A. sive Resta bovis vulgaris, purpurea et alba spinosa. Bauh. Hist. v. 2. 391. f, transposed with that of Epimedium.

γ. Ononis repens. Linn. Sp. Pl. 1006. Syst. Veg. ed. 14. 651. Willd. v. 3. 990. Lightf. 387.

O. inermis β. Huds. 313.

O. arvensis var. 2. With. 628.

Anonis procumbens maritima nostras, foliis hirsutis pubescentibus, Raii Syn. 332. Pluk. Almag. 33.

A. maritima procumbens, foliis hirsutis pubescentibus. Dill. Elth. 29. t. 25.

In barren pastures, the borders of fields, and sandy road-sides.
 γ on the sandy sea coast.

Perennial. *June—August.*

Root woody, tough and strong, whence the English name. *Stems* annual, though often considerably woody or shrubby, various in length, erect, reclining, or in γ quite prostrate; all round, branched, leafy and hairy, each of their principal, as well as short lateral, branches often terminating in a straight sharp *spine*, particularly where the soil is poor, or the roots of long standing, and this happens frequently even in the maritime variety γ . *Leaves* alternate, stalked, elliptical inclining to wedge-shaped, dark green, roughish, strongly marked with straight, parallel, oblique, lateral ribs; entire in their lower part; serrated with minute teeth towards the extremity; many of the lower ones ternate. *Stipulas* variable in size, on luxuriant plants rather large, ovate, toothed, combined, clasping the stem. *Fl.* axillary, mostly solitary, on short stalks, large and handsome, of a brilliant rose-colour. *Cal.* hairy; its teeth permanent, enlarging as the fruit ripens. *Standard* twice the size of the *wings* and *keel*. *Legume* obliquely rhomboid, partly hairy, not so long as the calyx. *Seeds* rough with minute points. The foliage and calyx are glutinous, and, in the first or more luxuriant variety, have a strong goat-like smell.

O. antiquorum, by the Linnæan specimen at least, which is an authentic one, differs in nothing, not even in hairiness, from the spinous state of our common plant. *O. hircina*, *Jacq. Hort. Vind. v. 1. t. 93*, sent by the author himself, may be a distinct species. It is much larger than any thing we have in Britain, erect, with perfectly elliptical *leaves*, copiously serrated throughout, mostly ternate; very large *stipulas*; and *flowers* usually in pairs. Its synonyms have generally been confounded with the unarmed state of our *O. arvensis*; see *Ger. Em. 1322. f. 3. Clus. Hist. v. 1. 99. f. 1*; and *Bauh. Hist. v. 2. 393. f. 2*. It is moreover the real *O. spinosa mitis*, *Linn. Sp. Pl. 1006*.

356. ANTHYLLIS. Kidney-vetch.

Linn. Gen. 371. Juss. 355. Fl. Br. 759. Lam. t. 615. Gærtn. t. 145.

Vulneraria. Tourn. t. 211.

Cal. tubular, ovate-oblong, inflated, shaggy, with 5 small, unequal, marginal teeth, permanent. *Cor.* of 5 petals, with linear claws the length of the calyx; standard longest, reflexed at the sides; wings half-ovate, shorter than the standard; keel of 2 narrower petals, compressed, slightly cohering at the tips. *Filam.* 10, united into one cylinder, finally splitting along the upper edge, their separate extremities curved upwards. *Anth.* small, round-

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ish. *Germ.* oblong or half-ovate. *Style* awl-shaped, ascending. *Stigma* obtuse. *Legume* small, roundish, or oblong, a little turgid, concealed within the enlarged inflated calyx, of 1 cell and 2 valves. *Seeds* 1 or 2, roundish-kidney-shaped, smooth.

Elegant herbaceous or shrubby, Europæan or African *plants*, with variously pinnate *leaves*, soft or silky pubescence, and mostly capitate and terminal, yellow or whitish, rarely red, *flowers*.

1. *A. vulneraria*. Common Kidney-vetch, or Ladies' finger.

Herbaceous. Leaves pinnate, unequal. Heads of flowers in pairs.

A. vulneraria. *Linn. Sp. Pl.* 1012. *Willd. v. 3.* 1013. *Fl. Br.* 759. *Engl. Bot. v. 2. t.* 104. *Dicks. H. Sicc. fasc.* 3. 10. *Hook. Scot.* 213. *Fl. Dan. t.* 988.

A. leguminosa. *Ger. Em.* 1240. *f. Lob. Ic. v. 2.* 87. *f.*

A. lenti similis. *Dod. Pempt.* 552. *f.*

A. prior Dodonæi. *Dalech. Hist.* 1380. *f.*

Anthyllis. *Riv. Tetrap. Irr. t.* 18. *f.* 1.

Vulneraria n. 398. *Hall. Hist. v. 1.* 173.

V. rustica. *Raii Syn.* 325. *Bauh. Hist. v. 2.* 362. *f.*

Loto affinis, Vulneraria pratensis. *Bauh. Pin.* 332. *Moris. v. 2.* 181. *sect. 2. t.* 17. *f.* 1, 2.

β. *A. vulneraria flore rubro*. *Dicks. H. Sicc. fasc.* 18. 18.

Vulneraria supina, flore coccineo. *Dill. in Raii Syn.* 325. *Hort. Elth.* 431. *t.* 320.

Loto affinis hirsuta, flore subrubente. *Bauh. Pin.* 333.

In chalky or limestone countries, where the soil is dry and rather barren.

β. In Pembrokeshire. *Mr. Lhwyd, and Mr. Dickson.*

Perennial. *June—August.*

Root woody. *Stems* annual, round, hairy, leafy, mostly simple, ascending, about a foot high. *Radical leaves* simple, elliptical, on long stalks, soon disappearing; the rest alternate, pinnate, with a terminal elliptical leaflet, and several pairs of opposite, smaller, more lanceolate ones; all entire; smooth, and a little glaucous above; hairy, or rather silky, underneath and at the margin. *Fl.* numerous, in a pair of crowded terminal heads, accompanied by fingered *bracteas*. *Cal.* membranous, pale and hairy. *Cor.* usually yellow, rarely of a fine red; in Germany, according to Haller, most frequently white. *Legume* semi-orbicular, compressed, veiny, smooth, with a solitary *seed*.

C. Gesner, it seems, first raised the report of the vulnerary properties of this plant, which perhaps, like other soft and downy

applications, may, on an emergency, staunch the blood of a rustic wound, and give nature and a good constitution time to perfect a cure. The herbage is said to afford good pasturage for sheep.

357. PISUM. Pea.

Linn. Gen. 374. *Juss.* 360. *Fl. Br.* 760. *Tourn. t.* 215. *Lam. t.* 633. *Gærtn. t.* 152.

Cal. cup-shaped, unequal; the margin in 5 acute segments, permanent; 2 uppermost widest, and most distant. *Cor.* of 5 petals; standard broadest, inversely heart-shaped, reflexed, notched, with a pair of protuberances at the inner side near the bottom, its claw vaulted; wings obovate, converging above, shorter than the standard, with wavy linear claws; keel semilunar, compressed, of 2 oblong, cohering, folded petals, smaller than the wings, and with narrower straight claws. *Filam.* 10; 9 united, for more than half their length, into one compressed keeled tube, open along its upper edge, which is closed by the tenth, separate, flattish, awl-shaped filament. *Anth.* small, roundish. *Germ.* oblong, compressed. *Style* ascending, triangular, membranous at the edges. *Stigma* longitudinal, downy, united to the acute upper edge of the style. *Legume* large, oblong, compressed, somewhat tumid, pointed, of 1 cell and 2 concave valves. *Seeds* several, globular.

Smooth *herbs*, with mostly annual, sometimes perennial and creeping, *roots*. *Stems* prostrate; or climbing by the terminal *tendrils* of their pinnate *leaves*. *Stipulas* large, toothed. *Fl.* in axillary stalked clusters, purple or bluish, or yellow. *Seeds* generally eatable.

1. *P. maritimum*. Sea Pea.

Footstalks flattish on the upper side. Stem angular. *Stipulas* arrow-shaped. Stalks many-flowered.

P. maritimum. *Linn. Sp. Pl.* 1027. *Willd. v.* 3. 1071. *Fl. Br.* 760. *Engl. Bot. v.* 15. *t.* 1046. *Spicil.* 8. *t.* 9. *Hook. Lond. t.* 5. *Fl. Dan. t.* 338.

P. marinum. *Raii Syn.* 319.

P. spontaneum perenne repens humile. *Moris. v.* 2. 47. *sect.* 2. *t.* 1. *f.* 5.

Pisa spontè nascentia. *Caii Opusc. lib.* 2. 29. 2.

On the stony sea shore, in several parts of the east and south of England.

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On the pebbly beach, between Aldburgh and Orford, Suffolk, abundantly; also near Hastings, Sussex. *Ray*. On the west side of Denge-ness, near Lyd, in Kent. *Cambden*. Lincolnshire. *With*. On the sharp ridge running from Portland island to Bridport. *Mr. Stackhouse*.

Perennial. *July*.

Roots creeping widely, much branched, running to the depth of many feet among the loose stones. *Herb* perfectly smooth. *Stems* about a span long, procumbent, simple, quadrangular, slightly compressed, zigzag, leafy, many-flowered, glaucous, often reddish. *Leaves* alternate, sessile, alternately and abruptly pinnate, the flattish common stalk of each ending in a branched *tendril*; *leaflets* 7 or 8, elliptical, with a small point, entire, veiny, of a dark rather glaucous green. *Stipulas* equal, triangular arrow-shaped, reflexed, toothed towards the base, rather smaller than the leaflets. *Clusters* axillary, solitary, stalked, many-flowered, the length of the leaves. *Fl.* purple, handsomely variegated and veined with crimson; the prominences in front of the *standard* white; *wings* and *keel* pale blue. *Legume* about half the size of the cultivated Pea, tipped with the permanent inflexed style. *Seeds* 6 or 8.

The character and habit of this species approach the genus *Lathyrus*, betwixt which and *Pisum* it is, in a manner, intermediate; but the *style* is not flattened, and dilated upward, like a true *Lathyrus*. The young seeds formerly proved a resource in a time of great scarcity, as Caius and other writers report. At present, as Dr. Hooker observes, sheep devour the plant before it can well blossom.

358. OROBUS. Bitter-vetch.

Linn. Gen. 374. *Juss.* 360. *Fl. Br.* 761. *Tourn. t.* 214. *Lam. t.* 633. *Gærtn. t.* 151.

Cal. cup-shaped, unequal; the margin in 5 acute segments; 2 uppermost shortest and most distant; lower one longest. *Cor.* of 5 petals; standard inversely heart-shaped, reflexed at the sides, rather longer than the rest; wings obovate, ascending, converging; keel rounded, pointed, rather tumid, of 2 combined petals, with separate claws. *Filam.* 10; 9 united into a compressed tube, open at the upper edge; the tenth capillary, quite distinct. *Anth.* small, roundish. *Germ.* oblong, compressed. *Style* ascending, straight, cylindrical, channelled above. *Stigma* longitudinal, linear, downy, running along the inner, or upper, side of the upper half of the style. *Legume* oblong, or linear, tumid, or somewhat cylindrical, with a

sharp ascending point, of 1 cell, and 2 rigid, twisting valves. *Seeds* several, roundish.

Perennial, generally upright *herbs*, not always smooth. *Roots* creeping, in some tuberous. *Leaves* pinnate, or conjugate, without tendrils. *Stipulas* oblong. *Fl.* numerous, handsome, racemose, variously coloured. *Seeds* not eatable.

1. *O. tuberosus*. Common Bitter-vetch. Heath Pea.

Leaves pinnate, elliptic-lanceolate. *Stipulas* half-arrow-shaped; toothed at the base. Stem simple, erect.

O. tuberosus. *Linn. Sp. Pl.* 1028. *Willd. v. 3.* 1074. *Fl. Br.* 761. *Engl. Bot. v. 17. t. 1153.* *Curt. Lond. fasc. 1. t. 53.* *Hook. Scot.* 213.

O. n. 417. *Hall. Hist. v. 1.* 181.

O. sylvaticus, foliis oblongis glabris. *Raii Syn.* 324.

O. radice tuberosa. *Riv. Tetrap. Irr. t.* 59.

Lathyrus angustifolius, radice tuberosâ. *Loes. Pruss.* 138. *t.* 37.

Astragalus sylvaticus. *Ger. Em.* 1237. *f. Sibb. Scot. p. 2. 11. t. 1.* *Thal. Harcyn. 7. t. 1.*

β. *Orobus tenuifolius*. *Roth Germ. v. 1.* 305. *Hoffm. Germ. for 1791.* 253. *D. Don in Tr. of Wern. Soc. v. 3.* 301.

In rather mountainous pastures, thickets, and woods.

Perennial. *May, June.*

Root creeping, externally blackish, swelling here and there into oblong knobs. *Herb* smooth, darkish green. *Stems* simple, erect, a foot high, compressed and winged, leafy. *Leaves* alternate, each of 2, $2\frac{1}{2}$, or 3 pair of lanceolate, somewhat elliptical, ribbed, entire, bluntish or acute, *leaflets*, their common *footstalk* projecting a little beyond them, but not bearing a tendril. *Stipulas* strongly toothed and extended at the base, various in width. *Fl.* in loose, long-stalked, axillary *clusters*, elegantly variegated and veined, with purple, crimson, and shades of blue and flesh-colour. *Legumes* pendulous, long, cylindrical, black when ripe.

The *roots* have a sweetish taste, and afford some luxuries and refreshments to the hardy independent Highlander. There is considerable elegance in the *flowers*, and in the plant altogether. β, an obvious variety, found in various parts of England as well as in Scotland, differs in having narrow linear *leaflets*.

2. *O. niger*. Black Bitter-vetch.

Leaves pinnate, of from four to six pair of elliptic-lanceolate leaflets. *Stipulas* linear-awl-shaped, simple, entire. Stem branched, angular, erect.

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O. niger. Linn. *Sp. Pl.* 1028. *Fl. Suec. ed.* 2. 251. Willd. v. 3. 1076. Ait. *Hort. Kew. ed.* 2. v. 4. 304. Hook. *Scot. p.* 2. 267.

O. n. 418. Hall. *Hist. v.* 1. 182.

O. sylvaticus, *viciæ foliis.* Bauh. *Pin.* 352.

O. foliis viciæ. Riv. *Tetrap. Irr. t.* 60.

O. pannonicus secundus. Clus. *Hist. v.* 2. 230. f. Pann. 738. f. *append.*

Astragaloides. Dod. *Pempt.* 551. f. Ger. *Em.* 1239. f.

A. altera herbariorum. Lob. *Ik. v.* 2. 78. f.

In dry mountainous pastures in Scotland, rare.

In the den of Airly, 12 miles west of Forfar, sparingly, found by Mr. Thomas Drummond. Mr. W. Robertson.

Perennial. *June, July.*

Root long and tapering; sweet, according to Linnæus. *Herb* smooth, turning black in drying like *O. tuberosus*. *Stems* several, one and half or two feet high, upright, branched, leafy, angular, not winged. *Leaves* usually of about five pair of elliptic-oblong, blunt, bristle-pointed, veiny *leaflets* an inch long, not invariably opposite; the common stalk very little elongated beyond them. *Flower-stalks* axillary, rather longer than the leaves, each bearing a *cluster*, of four or five elegant, blueish-purple, *flowers*. *Legumes* blackish, cylindrical. The *leaflets* are represented too small in all the figures above quoted, which indeed are all, except Rivinus's, from the same block.

3. *O. sylvaticus.* Wood Bitter-vetch.

Stems recumbent, hairy, branched. *Leaflets* numerous.

O. sylvaticus. Linn. *Sp. Pl.* 1029. Willd. v. 3. 1076. *Fl. Br.* 762. *Engl. Bot. v.* 8. t. 518. *Lightf.* 390. t. 16. Hook. *Scot.* 213. *Lond. t.* 8. Dicks. *H. Sicc. fasc.* 1. 12.

O. sylvaticus nostras. Raii *Syn.* 324.

Vicia cassubiea. *Fl. Dan. t.* 98; but not of Linnæus.

β , with simple leaves. Sm. *Tour to Hafod.* 16.

In mountainous woods and thickets.

At Gamblesby, Cumberland, about 6 miles from Penrith in the way to Newcastle, plentifully. Ray. In several parts of Wales, and the lowlands of Scotland. Also in Ireland, according to Dr. Wade.

Perennial. *May, June.*

Root creeping, woody, tough, deeply fixed in the ground. *Stems* numerous, spreading or recumbent, 1 to 2 feet long, somewhat branched, leafy, angular, more or less hairy, but in this respect the whole plant varies greatly. *Leaves* of numerous pairs of ovate-lanceolate, acute *leaflets*, whose common *footstalk* is somewhat elongated, but not so as to form a tendril. *Stipulas* half-arrow-shaped, single-toothed. *Clusters* of numerous *flowers*, about as long as the leaves. *Cal.* more hairy than the stalks.

Pet. cream-coloured, streaked and tipped with purple. *Legume* ovate-oblong, smooth, compressed, much shorter than usual in this genus, and very differently shaped. *Seeds* few, from 1 to 3, dark brown, smooth, almost globular, with a long linear scar, but no crest.

β is a truly wonderful variety, found by Mr. Todd, gardener to the late Mr. Johnes, on a hill near Hafod, Cardiganshire, bearing nothing but large, ovate, simple *leaves*, five times the size of the usual *leaflets*, but like them in texture, veins, &c. *Stipulas* rather smaller than usual. Rabbits are extremely fond of this variety, which, when transplanted into the garden, grew luxuriantly, increasing greatly by the *roots*, but could by no management be made to blossom. The *stems* are much more slender than in the common state of the plant.

359. LATHYRUS. Vetchling, and Everlasting-pea.

Linn. Gen. 375. *Juss.* 359. *Fl. Br.* 763. *Tourn. t.* 216, 217. *Lam. t.* 632. *Gærtn. t.* 152.

Clymenum. *Tourn. t.* 218.

Aphaca. *Tourn. t.* 223.

Cal. cup-shaped, unequal; cut, about half way down, into 5 lanceolate, acute segments; the 2 uppermost shortest; lower one longest. *Cor.* of 5 petals; standard largest, inversely heart-shaped, reflexed at the sides; wings oblong, obtuse, somewhat curved upwards, converging; keel rounded, rather tumid, of 2 combined petals, with separate claws. *Filam.* 10; 9 united into a compressed tube, open at the upper edge; the tenth capillary, quite distinct. *Anth.* small, roundish. *Germ.* linear-oblong, compressed. *Style* ascending, flattened vertically, dilated upwards, acute at the point. *Stigma* longitudinal, downy, running along the dilated upper half of the style. *Legume* long, either cylindrical or compressed, pointed, of 1 cell, and 2 rather rigid valves. *Seeds* several, roundish, or angular.

A numerous herbaceous genus, annual or perennial. *Stem* climbing, by means of the *tendrils* terminating the *foot-stalks*. *Leaflets* 2 or more, entire, rarely altogether wanting; *leaves* very rarely simple. *Stipulas* mostly arrow-shaped, and rather large; seldom very small. *Fl.* stalked, axillary, either solitary, in pairs, or in clusters; either crimson, purplish, blue, or yellow. The herbage com-

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monly affords good fodder; the *seeds* are scarcely used for any purpose.

* *Flowers mostly solitary.*

1. *L. Aphaca*. Yellow Vetchling.

Stalks single-flowered. Tendrils without leaves. Stipulas between heart- and arrow-shaped.

L. Aphaca. Linn. *Sp. Pl.* 1029. Willd. v. 3. 1077. Fl. Br. 763. Engl. Bot. v. 17. t. 1167. Curt. Lond. fasc. 5. t. 51. Pursh. v. 1. 339. t. 3.

L. n. 442. Hall. Hist. v. 1. 191.

Vicia lutea foliis convolvuli minoris. Bauh. Pin. 345. Moris. v. 2. 62. sect. 2. t. 4. f. 7.

V. quæ Pitine Anguillaræ, latâ siliquâ, flore luteo. Bauh. Hist. v. 2. 416. f. 417.

Aphaca. Raii Syn. 320. Mill. Ic. 29. t. 43. Ger. Em. 1250. f. Lob. Ic. v. 2. 70. f. Dod. Pempt. 545. f.

Orobanche legumen. Dalech. Hist. 484.

In the borders of sandy or gravelly fields, but rarely.

In Cambridgeshire. Relhan. Oxfordshire. Sibth. About Tottenham and Enfield. Curt. In a gravel pit between Norwich and Brooke. Mrs. Kett. Near Forncet, Norfolk. Mr. J. Fox.

Annual. June—August.

A little, smooth, pale glaucous-green herb, branching from the root into several weak stems, either procumbent, or climbing by means of numerous, alternate, simple tendrils, each of which springs from between a pair of large stipulas, of a broad arrow-shape, nearly entire. There are no true leaves or leaflets, except that now and then, on young plants, near the root, a pair of an elliptical shape, on one or two rudiments of tendrils, very rarely on a real tendril, may be observed. But these soon wither away. Fl. solitary, on long simple stalks, accompanying some of the tendrils, small, drooping, lemon-coloured. Bractees in pairs, awl-shaped. Teeth of the calyx long and lanceolate, ribbed. Legume about an inch in length, somewhat cylindrical, smooth, with about 6 round seeds.

2. *L. Nissolia*. Crimson Vetchling. Grass Vetch.

Stalks mostly single-flowered. Leaves simple, without tendrils. Stipulas awl-shaped.

L. Nissolia. Linn. *Sp. Pl.* 1029. Willd. v. 3. 1078. Fl. Br. 764. Engl. Bot. v. 2. t. 112. Curt. Lond. fasc. 6. t. 51.

L. n. 441. Hall. Hist. v. 1. 190.

DIADELPHIA—DECANDRIA. *Lathyrus*. 275

L. sylvestris minor. *Bauh. Pin.* 344. *Moris. v. 2.* 56. *sect. 2. t. 3. f. 7.*

L. angustifolius erectus, folio singulari sine capreolis. *Magn. Hort. Monsp.* 112. *t. 16.*

Nissolia parva, flore purpureo. *Buxb. Cent.* 3. 24. *t. 45. f. 1.*

N. vulgaris. *Lind. Alsat.* 73. *t. 3.*

Catanance. *Dalech. Lugd.* 1366. *f.*

C. leguminosa quorundam. *Raii Syn.* 325. *Bauh. Hist. v. 2.* 309. *f.*

Ervum sylvestre. *Dod. Pempt.* 529. *f.* *Ger. Em.* 1249. *f.* *Lob. Ic. v. 2.* 71. *f.*

In bushy places, and the grassy borders of fields.

Annual. *May.*

Taller than the last, and more erect, being supported, though destitute of *tendrils*, by surrounding plants. The *herbage* is smooth, of a grassy habit, as well as colour, by which it often escapes notice, except when bearing its beautiful crimson *blossoms*, variegated with purple and white. *Leaves* sessile, linear-lanceolate, taper-pointed, many-ribbed, entire, quite unlike the generality of this order. *Stipulas* in pairs at the base of each, awl-shaped, minute. *Fl.* mostly solitary, sometimes two, on long axillary stalks, downy in the upper part, where they bear one or two little awl-shaped *bracteas*. *Legume* long, nearly cylindrical, pendulous, with numerous *seeds*.

** *Flowers in pairs.*

3. *L. hirsutus*. Rough-podded Vetchling.

Stalks two-flowered. Each tendril with a pair of linear-lanceolate leaflets. Legumes hairy. Seeds rough.

L. hirsutus. *Linn. Sp. Pl.* 1032. *Willd. v. 3.* 1086. *Fl. Br.* 764. *Engl. Bot. v. 18. t. 1255.*

L. n. 437. *Hall. Hist. v. 1.* 189.

L. siliquâ hirsutâ. *Raii Syn.* 320. *Bauh. Hist. v. 2.* 305. *f.* *Riv. Tetrap. Irr. t. 41.*

In cultivated fields, but rare.

In various parts of Rochford Hundred, Essex. *Ray*. At Southend, Essex. *Mr. D. Turner*. Between Bath and Bristol; *Mr. Swayne*. *With.*

Annual. *July.*

Root small. *Stem* winged, slightly hairy, leafy, climbing, by the help of its branched *tendrils*, to the height of about two feet, very little branched. *Footstalks* winged, each bearing, at the base of the *tendril*, a pair of linear-lanceolate, 3-ribbed, veiny *leaflets*, either slightly hairy or quite smooth, varying much in breadth. *Stipulas* half-arrow-shaped, very narrow, somewhat hairy. *Fl.* usually 2 on each stalk, rarely 1 or 3, not large, but

elegantly variegated; standard bright crimson; wings pale blue; keel white. *Cal.* hairy, with deep, taper-pointed segments. *Legume* broad, compressed, remarkably hairy. *Seeds* rough, blackish.

*** *Flowers numerous on each stalk.*

4. *L. pratensis*. Yellow Meadow Vetchling.

Stalks many-flowered. Tendrils mostly simple, each bearing a pair of lanceolate leaflets.

L. pratensis. Linn. *Sp. Pl.* 1033. Willd. *v.* 3. 1089. *Fl. Br.* 765. *Engl. Bot.* *v.* 10. *t.* 670. *Curt. Lond. fasc.* 3. *t.* 44. *Mart. Rust.* *t.* 52. *Hook. Scot.* 213. *Fl. Dan.* *t.* 527. *Riv. Tetrap. Irr.* *t.* 43.

L. n. 436. *Hall. Hist.* *v.* 1. 189.

L. luteus sylvestris dumetorum. Raii *Syn.* 320. *Bauh. Hist.* *v.* 2. 304. *f.*

L. sylvestris, et *dumetorum*, flore luteo. *Moris.* *v.* 2. 51. *sect.* 2. *t.* 2. *f.* 2.

In meadows, pastures and thickets, very common.

Perennial. *July, August.*

Root creeping extensively, beset with fleshy tubercles, which render it very tenacious of life. *Herb* mostly smooth, of a slightly glaucous green, turning blackish in drying; not unfrequently a little rough or hairy. *Stems* weak, climbing, branched, leafy, acutely angular, not winged, rising to the height of 2 or 3 feet. *Tendrils* for the most part simple, sometimes divided; each accompanied by a pair of lanceolate, acute, variously ribbed leaflets. *Stipulas* unequally arrow-shaped, taper-pointed. *Flowers* bright yellow, larger than the foregoing, 8 or 9 together, on long, upright, angular stalks. *Cal.* hairy, with slender, not very deep, teeth. *Legumes* nearly upright, black, smooth, compressed, sparingly produced. *Seeds* 8 or 10, smooth.

Cattle are fond of this plant, which makes a great part of common meadow hay. It thrives on a wet clay soil, and has been recommended by Dr. Anderson for cultivation.

5. *L. sylvestris*. Narrow-leaved Everlasting-pea.

Stalks many-flowered. Tendrils branched, each bearing a pair of sword-shaped leaflets. Stem winged.

L. sylvestris. Linn. *Sp. Pl.* 1033. Willd. *v.* 3. 1089. *Fl. Br.* 765. *Engl. Bot.* *v.* 12. *t.* 805. *Curt. Lond. fasc.* 6. *t.* 52. *Hook. Scot.* 213. *Clus. Hist.* *v.* 2. 229. *f.* *Dod. Pempt.* 523. *f.* *Dalech. Hist.* 471. *f.*

L. n. 434. *Hall. Hist.* *v.* 1. 188.

L. sylvaticus. *Riv. Tetrap. Irr.* *t.* 39.

L. angustifolius alter. *Moris. v. 2. 51. sect. 2. t. 2. f. 4.*

Lathyri majoris species, flore rubente et albido minore, dumetorum. *Raii Syn.* 319. *Bauh. Hist. v. 2. 302. f.*

Pisum græcorum. *Trag. Hist.* 613. *f.*

Ervum sativum, rather sylvestre. *Fuchs. Hist.* 572. *f.*

E. sylvestre. *Fuchs. Ic.* 329. *f.*

In groves, thickets, and moist hedges.

Between Castle Campes and Bartlow, Cambridgeshire. *Dale*. In a copse under Shotover hill, Oxfordshire. *Sibth*. Common in Bedfordshire. *Abbot*. In several parts of Kent. *Curt*. On the south side of Brundle church, Norfolk, near a spring. *Mr. Humphrey*. Between Bath and Bristol abundantly, and near Conway. *Huds*. In all the hedges of the low country bordering the river Severn, between King's Weston and the New Passage. It is rare in Scotland.

Perennial. *July, August*.

Roots creeping. *Herb* smooth, climbing to the height of 5 or 6 feet. *Stem* branched, broadly winged. *Tendrils* in 3 or more divisions; with a pair of lanceolate, or sword-shaped, *leaflets*, 3 inches long, 3-ribbed, veiny, various in breadth; and a narrow-winged *footstalk*. *Stipulas* very narrow. *Fl.* from 3 to 7 or 8 together, on long axillary stalks, with an awl-shaped *bractea* to each flower. *Cal.* widely bell-shaped, with rather short teeth. *Cor.* variegated with pale crimson, violet, and tints of green, elegant though not splendid. *Legumes* long, compressed, tawny, reticulated with copious veins.

Most of the German authors represent but 2 *flowers* on each stalk. In England they are usually from 4 to 8.

6. *L. latifolius*. Broad-leaved Everlasting-pea.

Stalks many-flowered. *Tendrils* branched, each bearing a pair of elliptical *leaflets*. *Stem* winged.

L. latifolius. *Linn. Sp. Pl.* 1033. *Willd. v. 3. 1089. Fl. Br.* 766. *Engl. Bot. v. 16. t. 1108. Mart. Rust. t. 8. Mill. Illustr. t. 62. Hook. Scot. 214. Garid. Prov. 271. t. 108. Moris. v. 2. 51. sect. 2. t. 2. f. 3.*

L. n. 433. *Hall. Hist. v. 1. 188.*

L. Fl. Dan. t. 785; with synonyms of the foregoing.

L. major latifolius. *Raii Syn.* 319. *Ger. Em.* 1229. *f.*

L. major latifolius, flore majore, purpureo, speciosior. *Bauh. Hist. v. 2. 303. f.*

L. sativus latifolius. *Dalech. Hist.* 470. *f.*

L. narbonensis. *Riv. Tetrap. Irr. t. 40.*

Clymenum. *Matth. Valgr. v. 2. 320. f. ed. Bauh. 690. f. Camer. Epit. 712. f.*

In woods, but rare; by some supposed a doubtful native.

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In Madingley and other woods near Cambridge. *Ray. Martyn.*
On the rocks by Red Neese, near Whitehaven, Cumberland ;
Mr. Lawson. *Ray.* In Severn Stoke copse, Worcestershire ;
Mr. Ballard. *With.* At Hawnes and Bromham, Bedfordshire.
Abbot.

Perennial. *July, August.*

Root much branched, but not spreading widely. *Herb* like the last, but larger in all its parts, quite smooth, of a rather glaucous hue. *Leaflets* broadly elliptical, bluntish, with a small point, 3- or 5-ribbed, copiously reticulated with veins. *Tendrils* generally in 5 branches. *Stipulas* ovate in their upper part, and broader than the winged *stem*. *Fl.* 5—10, large and handsome ; all their *petals* of a fine rose-colour. Lower teeth of the *calyx* elongated. *Legume* long, compressed, rather narrow.

Haller speaks of this common garden plant as having, in his time, just began to attract the notice of agriculturists. Prof. Martyn recommends it for experiment, but I know not that he has been attended to. It thrives in any common soil, and the crop is very abundant. Bees obtain much honey from the flowers.

Most of the old figures represent the *leaflets* as more narrow than we usually find them.

I cannot but think Garidel's *t.* 108 represents a narrow-leaved variety of *L. latifolius*, which often occurs in gardens, notwithstanding a contrary opinion expressed by my able correspondent Dr. Bertoloni, *Amœn. Ital.* 173 ; and that the above-mentioned author, though none of the most learned, is correct in the name.

7. *L. palustris.* Blue Marsh Vetchling.

Stalks many-flowered. *Tendrils* branched, each bearing several elliptic-lanceolate leaflets. *Stipulas* lanceolate.

L. palustris. *Linn. Sp. Pl.* 1034. *Willd. v.* 3. 1090. *Fl. Br.* 767. *Engl. Bot. v.* 3. *t.* 169. *Fl. Dan. t.* 399.

L. n. 431. *Hall. Hist. v.* 1. 187.

L. viciæformis, seu *Vicia lathyroides nostras.* *Raii Syn.* 320.

L. palustris, flore orobi nemorensis verni. *Rupp. Jen. ed.* 1. 367. *f.*

Vicia lathyroides nostras, &c. *Pluk. Almag.* 387. *Phyt. t.* 71. *f.* 2.

Clymenum parisiense, flore cæruleo. *Tourn. Inst.* 396. *t.* 218.

In boggy meadows and thickets.

In Peckham fields ; T. Willisel. *Ray.* Near Abingdon, Berks.
Blackstone. In Leicestershire. *Dr. Pulteney.* In some parts
of Lancashire and Yorkshire. *Huds.* Near Ranaugh, Norfolk.
Mr. Humphrey. At Burgh, near Yarmouth. *Mr. D. Turner.*

Perennial. *July, August.*

Herb very smooth, somewhat glaucous, 3 or 4 feet high. *Stem* winged, but little branched. *Tendrils* usually in 2 or 3 divi-

sions, with 2 or 3 pair of elliptic-lanceolate *leaflets*, each having a midrib, and several parallel lateral nerves. *Stipulas* lanceolate, pointed, varying in width as well as the leaflets. *Fl.* from 3 to 6, in upright stalked clusters, not so large as either of the two last, but elegantly variegated with blue and purple tints. *Legume* smooth.

360. VICIA. Vetch.

Linn. Gen. 376. *Juss.* 360. *Fl. Br.* 768. *Tourn. t.* 221. *Lam. t.* 634. *Gærtn. t.* 151.

Cal. tubular, unequal, cut, about half way down, into 5 acute segments, all of equal breadth; the 2 uppermost shortest. *Cor.* of 5 petals; standard largest, oval, ascending, with a broad claw, the sides deflexed, the back somewhat keeled; wings elliptic-oblong, converging, shorter than the standard, with narrower claws; keel rounded, compressed, of 2 combined petals, with separate claws. *Filam.* 10; 9 united into a compressed tube, open at the upper edge; the tenth capillary, quite distinct, closing the fissure. *Anth.* small, roundish. *Germ.* linear-oblong, compressed. *Style* short, ascending at a right angle, cylindrical. *Stigma* obtuse, with a transverse tuft of hairs in front, below the summit. *Legume* long, more or less compressed, pointed, of 1 cell, and 2 coriaceous, rather rigid valves. *Seeds* several, roundish or angular.

Herbaceous, annual or perennial. *Stems* climbing, by the *tendrils* which terminate the *footstalks*. *Leaflets* for the most part very numerous, smaller than in *Lathyrus*, lanceolate, often abrupt. *Stipulas* half-arrow-shaped, toothed. *Fl.* axillary; either in stalked clusters; or almost sessile, solitary or in pairs; crimson, purplish, yellow, or whitish. *Herbage* often used for fodder.

* *Stalks elongated, many-flowered.*

1. *V. sylvatica*. Wood Vetch.

Stalks many-flowered. *Leaflets* elliptical. *Stipulas* crescent-shaped, deeply toothed.

V. sylvatica. *Linn. Sp. Pl.* 1035. *Willd. v.* 3. 1095. *Fl. Br.* 768. *Engl. Bot. v.* 2. *t.* 79. *Hook. Scot.* 214. *Fl. Dan. t.* 277.

V. n. 426. *Hall. Hist. v.* 1. 185. *t.* 12. *f.* 2.

V. sylvatica multiflora maxima. *Raii Syn.* 322.

V. multiflora maxima perennis, tetro odore, floribus albertibus, lineis cæruleis striatis. *Pluk. Almag.* 387. *Phyt. t.* 71. *f.* 1.

V. major species, quæ altius conscendit. *Moris. v.* 2. 61, *between 1 and 2.*

woods and hedges, chiefly in the more mountainous parts of Britain.

Not uncommon in Westmoreland, Cumberland, Worcestershire, Derbyshire, the north of Yorkshire, South Wales, and the south of Scotland. Found by the Rev. Mr. Hemsted in a wood near Newmarket. James Bobart the younger is said to have met with it in Oxfordshire, which Dr. Sibthorp's *Flora* confirms. [Near Lyminge, South Kent, *Mr. G. E. Smith.*]

Perennial. *July, August.*

Root creeping. *Herb* smooth ; not hairy as described in Morison.

Stems numerous, much branched, climbing to the height of 6 or 7 feet, and spreading widely, decorating the bushes which support them with a profusion of delicate *flowers*, elegantly variegated with blue and white, streaked with grey. *Tendrils* branched. *Leaflets* light green, numerous, opposite or scattered, oval with a small point. *Stipulas* fringed with numerous deep and slender teeth. *Fl.* numerous, in *clusters* longer than the leaves, supported by quadrangular stalks. *Cal.* rather bell-shaped, with unequal teeth. *Standard* notched. *Legume* scarcely more than an inch long, bright brown, minutely dotted, but not rough. *Seeds* about 4, roundish.

One of our most elegant wild plants, well worthy to decorate shrubberies, or to be trained over a treillis or bower.

2. *V. Cracca.* Tufted Vetch.

Stalks many-flowered. Flowers imbricated. Leaflets lanceolate, downy. Stipulas half-arrow-shaped, mostly entire.

V. Cracca. *Linn. Sp. Pl.* 1035. *Willd. v.* 3. 1098. *Fl. Br.* 769. *Engl. Bot. v.* 17. *t.* 1168. *Curt. Lond. fasc.* 5. *t.* 54. *Mart. Rust. t.* 117. *Hook. Scot.* 214. *Fl. Dan. t.* 804.

V. n. 424. *Hall. Hist. v.* 1. 184.

V. perennis multiflora spicata cærulea sepiaria. *Moris. v.* 2. 61. *sect. 2. t.* 4. *f.* 1.

Cracca. *Raii Syn.* 322. *Riv. Tetrap. Irr. t.* 49.

In hedges, thickets, osier-grounds and bushy low meadows, common.

Perennial. *July, August.*

Root creeping. *Stems* 2 or 3 feet high, furrowed, rather downy, climbing by means of their long many-branched *tendrils*, by which they choke and overtop other herbs. *Leaflets* numerous, elliptic-lanceolate, downy or rather silky on both sides. *Stipulas* each of 2 lanceolate spreading acute lobes, downy, occasionally

toothed. *Fl.* numerous, in dense *clusters*, on angular hairy stalks, various in length. *Cor.* beautifully variegated with tints of bright blue and some purple. *Cal.* partly coloured, nearly smooth. *Style*, as Curtis observes, hairy all round. *Legume* the size of the last, smooth, with 4 or 5 dark globular *seeds*.

Said to be nutritious food for cattle, but it has not come into use, probably from the difficulty of gathering, or of cultivating, so pertinacious a climber.

** *Flowers axillary, nearly sessile.*

3. *V. sativa*. Common Vetch.

Flowers nearly sessile, mostly in pairs. Leaflets elliptic-oblong; lower ones abrupt. Stipulas with a blackish depression beneath. Seeds orbicular, smooth.

V. sativa. *Linn. Sp. Pl.* 1037. *Willd. v.* 3. 1104. *Fl. Br.* 769. *Engl. Bot. v.* 5. t. 334. *Mart. Rust. t.* 116. *Hook. Scot.* 215. *Fl. Dan. t.* 522.

α . *Vicia*. *Raii Syn.* 320. *Riv. Tetrap. Irr. t.* 54. *Ger. Em.* 1227. *f. Lob. Ic. v.* 2. 75. *f. Camer. Epit.* 320. *f. Trag. Hist.* 624. *f.*

V. vulgaris sativa. *Bauh. Hist. v.* 2. 310. *f.*

V. vera, *Aphaca Matthiolo*. *Dalech. Hist.* 478. *f.*

Aphaca. *Matth. Valgr. v.* 1. 500. *f.*

β . *Vicia sylvestris*, sive *Cracca major*. *Raii Syn.* 321. *Ger. Em.* 1227. *f.*

V. n. 430. *Hall. Hist. v.* 1. 186.

V. lathyroides α . *Huds.* 318.

V. angustifolia. *Wild. v.* 3. 1105. *Riv. Tetrap. Irr. t.* 55. *Ehrh. Herb.* 57. *Roth Germ. v.* 1. 310?

V. vulgaris sylvestris, semine parvo et nigro, frugum. *Bauh. Hist. v.* 2. 312. *f.*

Vicia. *Matth. Valgr. v.* 1. 501. *f. bad.*

Aphaca vera, *Vicia Matthiolo*. *Dalech. Hist.* 478. *f.*

In corn fields, and other cultivated ground.

β Among grass or bushes, on more barren or sandy ground.

Annual. *May, June.*

Root tapering, with many fibres. *Herb* more or less downy, with minute, silky, scattered, tawny hairs, very variable in luxuriance, as well as in the shape and number of its *leaflets*; its colour a bright grass green. *Stems* procumbent, or more usually climbing by the branched *tendrils* of the footstalks, angular, furrowed, leafy, not branched, except at the bottom, from $1\frac{1}{2}$ to 3 feet high. *Leaflets* from 6 to 10, opposite or alternate, elliptic-oblong, bristle-pointed, abrupt; in β lanceolate and more acute; those of the lower *leaves*, in α more especially, short and inversely heart-shaped. *Stipulas* half-arrow-shaped, bristle-pointed, more or less toothed, variable in breadth, each stamped, as if by a hot iron, with a blackish depression on the under side,

palest in the variety β . *Fl.* usually in pairs, on short, axillary, downy stalks, inclining, often solitary. *Cal.* angular, a little hairy, with taper teeth about the length of the tube. *Pet.* variegated with shades of purplish crimson, with some blue and white. *Legumes* erect, linear-lanceolate, $1\frac{1}{2}$ inch long, flattish, downy, with 9 or 10 orbicular, rather compressed, very smooth seeds, usually dark brown, or blackish, but their colour is variable. The figure in *Engl. Bot. t.* 334, wanting the lower leaves, represents the usual wild state of this plant, intermediate between the cultivated variety, α , and the starved narrow-leaved one, β . As early fodder for cattle, the cultivated Vetch is in general use. Its seeds are food for pigeons.

4. *V. angustifolia*. Narrow-leaved Crimson Vetch.

Flowers solitary, nearly sessile. Leaflets linear; lower ones inversely heart-shaped. Stipulas with a pale depression beneath. Seeds orbicular, smooth.

V. angustifolia. *Sibth.* 224; but not of *Roth*, or *Willdenow*, or *Rivinus*.

V. sativa γ . *Fl. Br.* 770.

V. sylvestris, flore ruberrimo, siliquâ longâ nigrâ. *Raii Syn.* 321.

V. lathyroides. *Dicks. H. Sicc. fasc.* 4. 12. *Huds.* 319, β . *Villars Dauph. v.* 3. 452, from the author.

V. folio angustiore, flore rubro. *Dill. Giss. app.* 47.

In grassy pastures, on a chalky or gravelly soil.

On Shotover hill, Oxfordshire. *Bobart.* In Stow wood. *Sibth.* At Weymouth. *Sir T. G. Cullum, Bart.* In Scotland. *Mr. A. Bruce.* In Hyde Park. *Dickson.* Among short grass in Richmond gardens.

Annual? *June.*

Root tapering, furnished with a few fleshy lateral tubercles; branching at the crown. *Herb* smaller than any variety of the former, of a slender delicate habit, and distinguished by its very conspicuous, elegant, crimson flowers, white at the keel and lower edge of the wings, and rather large in proportion to the other parts. The *stems*, mostly procumbent, are a span long, unbranched, slender, striated, smooth. *Tendrils* with 2 or 3 capillary branches. *Stipulas* small, but not always narrow, smooth, sometimes toothed, their depressed mark rather pale than blackish. *Leaflets* 6 or 7; those of the lower leaves short, inversely heart-shaped; of the upper ones oblong or linear, abrupt, or acute, with a small point; all clothed on both sides with scattered silky hairs; the longest scarcely exceeding half an inch. *Fl.* I believe always solitary, those who describe them otherwise having confounded this species with variety β of the last. *Legumes* nearly upright, narrow, downy, finally blackish. *Seeds* 9 or 10, much like the preceding, but smaller.

German as well as English botanists have so much confounded the synonyms of the present plant, with starved varieties of the *V. sativa*, and even with the more decidedly distinct *V. lathyroides*, that their characters have misled me. The observations of Mr. T. F. Forster induced me to re-examine the matter, and indeed to rely on my own original opinion.

5. *V. lathyroides*. Spring Vetch.

Flowers solitary, nearly sessile. Leaflets elliptic-oblong; lower ones inversely heart-shaped. Tendrils simple, shorter than the leaflets. Seeds cubic, warty.

V. lathyroides. *Linn. Sp. Pl.* 1037. *Willd. v. 3.* 1106. *Fl. Br.* 771. *Engl. Bot. v. 1. t.* 30. *Hook. Scot.* 215. *Jacq. Misc. v. 2.* 299. *t.* 18. *Fl. Dan. t.* 58. *Ehrh. Herb.* 28.

V. n. 10. *Gerard Gallopr.* 498; *from the author.*

V. n. 4. *Guettard Obs. v. 1.* 235.

V. minima præcox Parisiensium. *Dill. in Raii Syn.* 321. *Tourn. Inst.* 397; *according to his herbarium.*

V. minima. *Riv. Tetrap. Irr. t.* 55.

V. pratensis verna, seu præcox Soloniensis, semine cubico, seu hexædron referente. *Moris. v. 2.* 63. *sect. 2. t. 4. f.* 14; very bad.

Ervum soloniense. *Linn. Sp. Pl.* 1040. *Huds. ed. 1.* 279.

In fallow fields on a gravelly soil, in chalky pastures, or on dry banks.

About Norwich, and in Hyde Park; also in the King's park and various other places round Edinburgh. [Upon the South coast of Kent, common. *Mr. G. E. Smith.*]

Annual. *April, May.*

Root fibrous, beset with minute fleshy tubercles. Stems several, procumbent in opposite directions, branched at the bottom only, 3 or 4 inches long, angular, leafy, finely downy like the rest of the herbage. Footstalks channelled, each ending in a very short simple tendril, or none at all. Leaflets of the lower leaves 2 or 4, short, broad, inversely heart-shaped; of the upper ones 4 or 6, elliptical, obovate, or lanceolate, pointed; all finely hairy on both sides. Stipulas half-halberd-shaped, for the most part entire, rarely with a lateral tooth, and quite destitute of any discoloured impression. Fl. small, solitary, of a light blueish purple, occasionally white. Stigma bearded in front, like a true *Vicia*. Legume not an inch long, rather tumid, dark brown, destitute of all pubescence, but very minutely dotted all over. Seeds about 6, small, dark brown, cubical, covered with prominent warts or granulations, by which, and their shape, this species, so generally misunderstood, may be clearly distinguished from all to which it is allied.

V. lathyroides of Allioni, *Fl. Pedem. t.* 59. *f.* 2, mentioned by Willdenow, is totally different from this, and perhaps belongs to our *angustifolia*.

6. *V. lutea*. Rough-podded Yellow Vetch.

Flowers solitary, very nearly sessile. Standard smooth. Legumes reflexed, hairy. Stems diffuse. Stipulas ovate, pointed, coloured.

V. lutea. Linn. *Sp. Pl.* 1037. Willd. *v.* 3. 1107. *Fl. Br.* 772. *Engl. Bot.* *v.* 7. *t.* 481. Hook. *Scot.* 215. *Lond. t.* 74.

V. luteo flore sylvestris. Bauh. *Hist.* *v.* 2. 313. *f*; but not perhaps of Ray.

V. sylvestris lutea, siliquâ hirsutâ, nondum descripta. Bauh. *Pin.* 345.

V. flore luteo pallido, siliquis propendentibus hirsutis. Moris. *v.* 2. 62, under *n.* 4. *sect.* 2. *t.* 21. *f*.

On stony ground, chiefly near the sea.

At Orford, Suffolk, upon the pebbly beach. Mr. Humphrey. At Aldborough. Rev. Mr. Burroughes. Near Weymouth. Huds. Shoreham, Sussex. Mr. Borrer. Mearns-shire, North Britain. Prof. Beattie. In a chalk-pit on the side of Glastonbury Tor-hill. Mr. D. Turner.

Perennial. August.

Root creeping, divided at the crown into many branches. Stems several, spreading on the ground in every direction, scarcely branched, except at the bottom, from 1 to 2 feet in length, slender, angular, smooth, striated, leafy. Leaflets numerous, opposite or scattered, elliptic-lanceolate, sometimes abrupt; hairy beneath. Tendrils long, branched. Stipulas small, ovate, or somewhat triangular, pointed, marked with a blood-red, or almost black, central spot, generally spreading over the whole; often having a slight, direct, not reflexed, tooth at their base. Fl. very nearly sessile, erect, much larger than the leaflets, of a pale sulphur-colour striped with grey; rarely all over ash-coloured, or white. Cal. tubular, pale green, smooth. Standard perfectly smooth. Legume bent downwards as it ripens, ovate-oblong, slightly tumid, $1\frac{1}{2}$ inch long and $\frac{1}{2}$ an inch broad, all over rough with short rigid hairs arising from small tubercles. Seeds 5 or 6, oval, smooth.

That this Vetch grows on Glastonbury Tor-hill, as well as the following, has been ascertained by Mr. Turner.

Some of its branches are entirely subterraneous, producing colourless, apparently imperfect, flower-buds, which nevertheless form seeds. Of this curious fact there are several examples among various exotic species of *Vicia* and *Lathyrus*.

7. *V. hybrida*. Hairy-flowered Yellow Vetch.

Flowers solitary, almost sessile. Standard hairy. Legumes reflexed, hairy. Stems ascending. Leaflets abrupt. Stipulas ovate, unstained.

V. hybrida. Linn. *Sp. Pl.* 1037. Willd. *v.* 3. 1107. Fl. Br. 772.

Engl. Bot. *v.* 7. *t.* 482. Jacq. *Hort. Vind.* *v.* 2. 68. *t.* 146.

V. luteo flore sylvestris. Raii *Syn.* 321; but not of Bauhin.

V. sylvestris lutea, cum galeâ fuscâ. Bauh. *Hist.* *v.* 2. 314. *f.*

In thickets in the south of England, very rare.

On Glastonbury Tor-hill. Ray. Gathered there by the late Mr. Sole, and Mr. Lambert. It is not to be found at Weymouth, nor perhaps in any other place in England besides the above-mentioned.

Perennial. June, July.

Much like the preceding, but rather taller and more upright, sustaining itself, by the branched *tendrils*, upon neighbouring plants. *Leaflets* oblong, hairy, variable in their termination, but always more abrupt or notched than in *V. lutea*, with a more conspicuous point. *Stipulas* ovate, acute, entirely green. *Fl.* on very short stalks, pendulous, somewhat larger than *V. lutea*, of nearly the same colour, but more tawny or reddish externally, with reddish stripes, and no grey or blueish tint. The essential specific difference however consists in the *standard* being clothed externally with abundance of shining yellowish hairs, never observed to vary. *Legume* like the last, in shape, hairiness and position.

There cannot but be some uncertainty respecting the older synonyms of these two plants. J. Bauhin says he could not, in his dried specimens, discover the character of "*galea fusca*," under which they were sent to him.

8. *V. lævigata*. Smooth-podded Sea Vetch.

Flowers solitary, nearly sessile. Legumes reflexed, smooth.

Stems ascending. *Stipulas* cloven, unstained. *Leaflets* bluntish, very smooth.

V. lævigata. *Engl. Bot.* *v.* 7. *t.* 483. Fl. Br. 773. Willd. *v.* 3. 1108.

V. hybrida. Huds. 319. With. 639.

V. maritima, flore albo longo. Moris. *v.* 2. 62. *sect.* 2. *t.* 21. *f.*?

On the pebbly coast of the south of England.

At Weymouth, Dorsetshire. Rev. Mr. Baker, Mr. Hudson, and others.

Perennial. July, August.

Root furnished with many lateral, subterraneous, fleshy knobs; branched at the crown. *Herbage* allied to the two last species, but in every part perfectly smooth. *Stems* either 3 or 4 inches high, and upright; or above a foot long, and somewhat reclining, quadrangular, scarcely striated. *Tendrils* rather short, in 2 or 3 divisions. *Leaflets* elliptic-oblong, bluntish, or rounded, with a minute point, but never notched, nor very abrupt; their texture firm; their colour a rather dark green. *Stipulas* short, with a lateral lobe, green, or pale brown. *Fl.* almost erect. *Cal.*

with more equal teeth than either of the foregoing. *Pet.* pale blue, or whitish, seldom yellowish, all quite smooth. *Legume* reflexed, rather short and broad, quite smooth, with about 5 seeds, which when young are bitter and astringent as in the neighbouring species.

Authentic specimens prove this to have been Mr. Hudson's *V. hybrida*, found at Weymouth, though the plant before us wants the most essential characters of that species.

9. *V. sepium*. Common Bush Vetch.

Flowers about four together, in short axillary clusters. Legumes upright, smooth. Leaflets ovate, obtuse; the upper ones gradually smaller.

V. sepium. *Linn. Sp. Pl.* 1038. *Willd. v.* 3. 1109. *Fl. Br.* 773. *Engl. Bot. v.* 22. *t.* 1515. *Hook. Scot.* 215. *Fl. Dan. t.* 699. *Riv. Tetrap. Irr. t.* 56.

V. n. 429. *Hall. Hist. v.* 1. 186.

V. sepium perennis. *Raii Syn.* 320. *Bauh. Hist. v.* 2. 313. *f.*

V. maxima dumetorum. *Ger. Em.* 1227. *f.*

Aphace. *Fuchs. Hist.* 110. *f.* *Ic.* 61. *f.*

β. *Vicia folio subrotundo brevi, obtusè mucronato, pediculo brevi insidente, flore Viciæ sepium seu dumetorum vulgaris. Raii Syn.* 321.

In thickets and under hedges, common.

Perennial. *May, June.*

Root branched at the crown, or slightly creeping. *Stems* about 2 feet high, angular, smooth, but little branched, weak, supported upon other plants by the branched *tendrils* of the *leaves*. *Leaflets* opposite, or most frequently alternate, elliptic-ovate, obtuse, or abrupt, membranous, hairy, minutely pointed, dull green, gradually smaller towards the upper part of each *footstalk*. *Stipulas* various, undivided or two-lobed, acute, each marked with a brown spot. *Fl.* dull blueish purple, variegated, sometimes white, from 4 to 5 or 6 together, in short, dense, axillary clusters, all leaning one way. *Cal.* with a longish tube, and short, narrow teeth, hairy about its upper part. *Legumes* ascending or upright, an inch long, smooth, blackish, pointed. *Seeds* globular, smooth.

β seems to be a variety with short rounded *leaflets*, or, if the definition be correct, with simple *leaves*, perhaps analogous to that of *Orobis sylvaticus* above described; but this can only be conjectured.

Schreber recommends this *Vicia* as excellent food for cattle. It has not been attended to in England.

A very extraordinary variety of the present species, gathered in Scotland by Mr. Arthur Bruce, has only 3, 4 or 5 *leaflets*, to each *leaf*, larger than usual, the largest of all, above an inch long, being in the place of a *tendril*.

10. *V. bithynica*. Rough-podded Purple Vetch.

Flowers stalked, mostly solitary. Legumes upright, rough. Leaflets two pair, lanceolate. Stipulas with lateral teeth.

V. bithynica. Linn. *Sp. Pl.* 1038. Willd. *v. 3.* 1110. *Fl. Br.* 774. *Engl. Bot. v. 26. t. 1842.* Jacq. *Hort. Vind. v. 2. 69. t. 147.* Allion. *Pedem. v. 1. 325. t. 26. f. 2.* Marsch. *Taur-Cauc. v. 2. 163.* Cracca floribus albis, foliis circa caulem denticulatis. Buxb. *Cent. 3. 25. t. 45. f. 2.*

Aracus major, an *Vicia Lathyroides*, siliquis in eodem pediculo binis. Raii *Hist. v. 3. 448.*

Clymenum Bithynicum, siliquâ singulari, flore minore. Bærh. *Ind. Alt. v. 2. 43.*

Lathyrus palustris, flore orobi nemorensis verni, nondum descriptus. Rupp. *Jen. ed. 1. 367. f.*

In bushy places, on a gravelly soil, often near the sea.

Near Doncaster, Yorkshire. Mr. Tofield. In woods near Clifton upon Teme, Worcestershire. Dr. Stokes. Between Chockenhall and Sandling, in the same county. Rev. Dr. Abbot. In a field half way between Weymouth and Portland ferry, near the sea. Mr. Lambert. On the coasts of Dorsetshire and Hampshire. Mr. Borrer.

Perennial. July, August.

Root branching at the crown, furnished under ground with several small fleshy knobs. Stems weak, leafy, angular, slightly branched, smooth, about 18 inches long, prostrate, unless supported by the branched or simple tendrils. Leaflets 4, on the lowermost footstalks but 2; elliptic-lanceolate, sometimes nearly linear; about $1\frac{1}{2}$ inch long, minutely pointed, entire, single-ribbed, with many lateral, straight, oblique veins; the under side somewhat hairy. Stipulas variable in breadth, half-arrow-shaped, with several deep, taper-pointed, fringed teeth. Fl. on solitary, almost universally single-flowered, axillary stalks, shorter than the leaves. Cal. ribbed, tubular, hairy upwards, with very long, taper-pointed, fringed, slightly unequal, teeth. Standard purplish. Keel and wings white, the former tipped with light violet, the latter tinged with pale blue, both changing to a greenish brown in 12 hours after the flower is gathered. Legumes erect, broad, slightly tumid, reticulated with veins, rough at the sides, and more densely at the margin, with short, rigid, tawny hairs. Seeds 5 or 6, globose, smooth, speckled with black and grey. The stigma is truly that of a *Vicia*, though the habit rather answers to *Lathyrus*, where Linnæus first placed this species.

361. ERVUM. Tare.

Linn. *Gen.* 376. Juss. 360. *Fl. Br.* 775. Willd. *v. 3.* 1112. Tourn. *t. 221.* Lam. *t. 634.*

Cal. tubular, cut, about half way down, into 5 lanceolate, taper-pointed segments, shorter than the corolla; the lowermost rather the longest. *Cor.* of 5 petals; standard largest, obovate, slightly reflexed; wings half as long, obtuse; keel nearly equal to the wings, rounded, with an acute point, of 2 combined petals, with separate claws. *Filam.* 10; 9 united into a compressed tube, open at the upper edge; the tenth capillary, distinct, closing the fissure. *Anth.* small, roundish. *Germ.* oblong, compressed. *Style* cylindrical, half as long, ascending at a right angle. *Stigma* terminal, capitate, all over hairy. *Legume* oblong, compressed, bluntish, tumid only from the projection of the seeds, which are from 2 to 4, roundish, a little flattened.

Annual slender *herbs*, climbing by means of the *tendrils* of their numerous pinnate narrow *leaves*. *Clusters* stalked, axillary, each of a very few small, pale *flowers*. *Legumes* small, pendulous. Our species, nearly all that really belong to the genus, are useless, and but too prolific, weeds. The Linnæan generic description is taken from *E. Lens*, which is truly a *Cicer*.

1. *E. tetraspermum*. Smooth Tare.

Flowers mostly in pairs. Legume smooth, with four seeds. Leaflets oblong, bluntish.

E. tetraspermum. *Linn. Sp. Pl.* 1039. *Willd. v.* 3. 1112. *Fl. Br.* 775. *Engl. Bot. v.* 17. *t.* 1223. *Curt. Lond. fasc.* 1. *t.* 55. *Hook. Scot.* 216. *Fl. Dan. t.* 95.

Vicia n. 423. *Hall. Hist. v.* 1. 184.

V. minor segetum, cum siliquis paucis glabris. *Moris. v.* 2. 64. *sect.* 2. *t.* 4. *f.* 16.

V. segetum, singularibus siliquis glabris. *Bauh. Pin.* 345.

Viciæ, sive *Craccæ* minimæ, species cum siliquis glabris. *Bauh. Hist. v.* 2. 315. *f.*

Cracca minor, siliquis singularibus, flosculis cærulescentibus. *Raii Syn.* 322.

C. minor, siliquis gemellis. *Riv. Tetrap. Irr. t.* 53. *f.* 1.

In corn fields, hedges and thickets, particularly such as are rather moist.

Annual. *June, July.*

Root small and tapering. *Herb* besprinkled with fine soft hairs, especially the *flower-stalks* and *calyx*. *Stem* weak, quadrangular, branched from the bottom, leafy, climbing to the height of 2 or 3 feet. *Leaflets* 4 pair or more, linear-oblong, more or less blunt, with a minute point. *Stipulas* half-arrow-shaped,

narrow, entire. *Fl.* usually 2 on each stalk, rarely 3 or 4, often solitary, small, drooping, pale grey; the standard streaked, and the keel tipped, with a deep blue. *Legumes* pendulous, oblong, bluntish, smooth. *Seeds* most generally 4; sometimes from abortion 3 only; rarely 5, 6 or 7.

Rather uncommon in Switzerland, where the following species is very frequent.

2. *E. hirsutum*. Hairy Tare.

Clusters many-flowered. *Legumes* hairy, with two seeds. Leaflets abrupt.

E. hirsutum. *Linn. Sp. Pl.* 1039. *Willd. v. 3.* 1113. *Fl. Br.* 776. *Engl. Bot. v. 14. t.* 970. *Curt. Lond. fasc. 1. t.* 54. *Hook. Scot.* 216. *Fl. Dan. t.* 639.

Vicia n. 422. *Hall. Hist. v. 1.* 184.

V. minor segetum, cum siliquis plurimis hirsutis. *Bauh. Pin.* 345. *Moris. v. 2. 63. sect. 2. t. 4. f.* 15.

V. sylvestris, sive *Cracca*, minima. *Ger. Em.* 1228. *f.*

V. parva, sive *Cracca minor*, cum multis siliquis hirsutis. *Bauh. Hist. v. 2.* 315. *f.*

Cracca minor. *Raii Syn.* 322. *Riv. Tetrap. Irr. t.* 53. *f.* 2.

Craccæ alterum genus. *Dod. Pempt.* 542. *f.*

Aracus sive *Cracca minima*. *Lob. Ic. v. 2.* 76. *f.*

In corn fields, and other cultivated ground, as well as in hedges, a very troublesome weed, especially in wet seasons.

Annual. *June—August.*

Habit much like the foregoing; but the *stem* is nearly smooth, as well as the *leaflets*, which are rather broader, and more abrupt, or notched at the end. *Stipulas* often in many slender divisions. *Fl.* from 5 to 7 in each cluster, very small, pale blue, or almost white, with 2 dark spots on the keel. *Legumes* short, dark brown, besprinkled with hairs, to which the specific name alludes. *Seeds* 2 in each legume, large and prominent; often, from abortion, solitary.

362. ORNITHOPUS. Bird's-foot.

Linn. Gen. 381. *Juss.* 361. *Fl. Br.* 776. *Lam. t.* 631. *Gärtn. t.* 155. *Ornithopodium. Tourn. t.* 224.

Cal. tubular, permanent; the margin in 5, nearly equal, teeth. *Cor.* of 5 petals; standard obovate, ascending, entire; wings rather smaller, obovate, curved upward; keel still smaller, of 2 slightly tumid, converging, rounded petals, with slender distinct claws. *Filam.* 10; 9 in one compressed tube, slit along the upper edge; the tenth capillary, distinct; all curved upward at the extremity. *Anth.* minute, roundish. *Germ.* linear, compressed. *Style*

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slender, ascending. *Stigma* capitate, naked. *Legume* curved, compressed, jointed, separating finally at the joints, each of which remains closed, containing a solitary roundish *seed*.

Small, mostly annual, *herbs*. *Leaves* pinnate, with an odd leaflet; rarely ternate only. *Stipulas* undivided. *Fl.* either capitate or umbellate, reddish or yellow, minute.

1. *O. perpusillus*. Common Bird's-foot.

Leaves pinnate. Flowers capitate, accompanied by a leaf. Legumes incurved, beaded.

O. perpusillus. *Linn. Sp. Pl.* 1049. *Willd. v. 3.* 1155. *Fl. Br.* 777.

Engl. Bot. v. 6. t. 369. *Curt. Lond. fasc. 6. t. 53.* *Hook. Scot.* 216.

Ornithopodium n. 393. *Hall. Hist. v. 1.* 17.

O. radice nodosâ. *Raii Syn.* 326.

O. minus. *Ger. Em.* 1241. *f.*

O. tuberosum. *Dalech. Hist.* 486. *f.*

In sandy or gravelly pastures.

Annual. *May*.

Root fibrous, annual, though, as Dillenius in Ray's *Synopsis* records, after Mr. Doody, it is sometimes propagated by subterraneous lateral granulations, or *knobs*, in the manner of a potatoe, in which case the seeds are abortive. Similar *knobs* occur in *Vicia lathyroides*, and other papilionaceous plants. The *stems*, often numerous, are procumbent, from 3 to 10 or 12 inches long, furrowed, downy, leafy. *Leaves* alternate, of from 5 to 10 or 12 pair of small, uniform, elliptical *leaflets*, hairy, especially at the back, with a terminal one about the same size and figure. *Stipulas* very small, the upper ones lanceolate or awl-shaped, scarcely visible; lower linear, acute, united laterally to the *foot-stalks*. *Fl.* 3 or 4 in each little head, or tuft, closely accompanied by a pinnate leaf, of but few leaflets. *Cal.* downy, coloured. *Standard* and *wings* white, beautifully veined with crimson; *keel* greenish. *Legumes* pointed, curved upwards, finely hairy, wrinkled lengthwise when dry, their bead-like joints elliptical, moderately compressed.

O. majus, *Bauh. Pin.* 350. *Ger. Em.* 1241. *f.* 3, is supposed to be a larger variety of *perpusillus*, different from *O. intermedius* of Roth and Hoffmann. Roth describes the latter as having *stems* 2 or 3 feet long, *flowers* thrice the size of *perpusillus*, and a very hairy *calyx*. Nothing answering to this account has been observed in England.

363. HIPPOCREPIS. Horse-shoe-vetch.

Linn. Gen. 381. *Juss.* 361. *Fl. Br.* 777. *Lam. t.* 630.

Ferrum equinum. *Tourn. t.* 225.

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Cal. bell-shaped, permanent, divided, about half way down, into 5 acute, lanceolate segments; the 2 uppermost shortest, and less deeply separated. *Cor.* of 5 petals, their claws longer than the calyx; standard heart-shaped, ascending, with a vaulted claw; wings obovate, obtuse, with flat broadish claws; keel of 2 combined petals, rounded, pointed, with very narrow separate claws. *Filam.* 10; 9 united into a tube, open at the upper edge; the tenth quite distinct; all curved upwards at the extremity. *Anth.* roundish. *Germ.* slender, compressed, tapering into an awl-shaped ascending *style*. *Stigma* linear, rather flattened, quite smooth. *Legume* compressed, partly membranous, incurved, jointed, notched, separating finally at the joints, each of which is nearly crescent-shaped, simple or bordered, closed, tumid, containing a solitary, curved, oblong *seed*.

Annual or perennial *herbs*, larger than the last genus. *Leaves* pinnate, with an odd *leaflet*, uniform. *Stipulas* membranous, oblong, undivided. *Fl.* umbellate, yellow; in one species solitary. *Legumes* curiously notched.

1. *H. comosa*. Tufted Horse-shoe-vetch.

Legumes umbellate, rough; their joints neither dilated nor bordered.

H. comosa. *Linn. Sp. Pl.* 1050. *Willd. v. 3.* 1159. *Fl. Br.* 777. *Engl. Bot. v. 1. t. 31.* *Dicks. H. Sicc. fasc. 8.* 14. *Hook. Scot.* 216.

Ferrum equinum n. 391. *Hall. Hist. v. 1.* 170.

F. equinum Germanicum, siliquis in summitate. *Bauh. Pin.* 349. *Raii Syn.* 325.

F. equinum comosum. *Riv. Tetrap. Irr. t. 97. f. 2.*

F. equinum capitatum. *Column. Ecphr.* 302. *t. 301. f. 1.* *Moris. v. 2.* 118. *sect. 2. t. 10. f. 3.*

Sferra cavallo. *Camer. Epit.* 642. *f. 1.*

On dry chalky banks; sometimes on limestone.

Plentiful in Kent, Berkshire, Cambridgeshire, at Marham in Norfolk, and in most chalk countries.

Perennial. *May—August.*

Root woody, running deep into the ground. *Stems* branched at the bottom, furrowed, leafy, smooth, procumbent, from 6 to 12 inches long. *Leaflets* from 7 to 11, obovate, obtuse or abrupt, very minutely pointed, somewhat fleshy; smooth above; more or less hairy beneath. *Stipulas* ovate, entire, a little spreading. *Fl.* about 6 or more together, in umbels, rising high above the rest of the plant, on long, stout, smooth, naked, axillary or terminal, stalks. *Standard* deep yellow, and striated, in front;

292 DIADELPHIA—DECANDRIA. Hedysarum.

other *petals* paler. *Legumes* above an inch long, curved downward, bright bay-coloured, rough with minute prominent points; their joints crescent-shaped, nearly cylindrical, obscurely two-edged, but without any of the marginal dilatation remarkable in other species.

364. HEDYSARUM. Saint-foin.

Linn. Gen. 382. *Juss.* 362. *Fl. Br.* 778. *Tourn. t.* 225. *Lam. t.* 628. *Gærtn. t.* 155.

Onobrychis. Tourn. t. 211.

Cal. tubular, permanent, divided half way down into 5 awl-shaped, straight segments. *Cor.* of 5 petals; standard ovate-oblong, keeled at the back, slightly cloven, reflexed at the sides; wings oblong, straight, narrower than the other petals; keel of 2 united petals with separate claws, compressed almost flat, very abrupt and straight, almost rectangular, in front. *Filam.* 10; 9 in one flattish tube, open above; the tenth awl-shaped, distinct, usually shorter; all capillary, and bent upwards, at the extremity. *Anth.* roundish. *Germ.* ovate, or oblong, compressed. *Style* awl-shaped, curved upwards. *Stigma* simple, acute, naked. *Legume* of one or more roundish, compressed, bivalve but close joints, each containing a solitary, kidney-shaped seed.

A very numerous, herbaceous or shrubby genus, with pinnate, ternate, or simple *leaves*; copious, handsome, clustered, crimson or purplish *flowers*; and *seed-vessels* so various, that an over-curious fabricator of genera might here find ample employment, though not to any good purpose. *Stylosanthes* of Swartz, and *Hallia* of Thunberg, have indeed been well removed from the original *Hedysarum*.

1. H. *Onobrychis*. Common Saint-foin. Cock's-head.

Leaves pinnate, nearly smooth. Legume single-seeded, toothed at the margin and ribs. Wings of the corolla not longer than the calyx. Stem elongated.

H. *Onobrychis. Linn. Sp. Pl.* 1059. *Willd. v.* 3. 1215. *Fl. Br.* 778. *Engl. Bot. v.* 2. *t.* 96. *Mart. Rust. t.* 47. *Jacq. Austr. t.* 352.

Onobrychis. Riv. Tetrap. Irr. t. 2. *Dod. Pempt.* 548. *f.*

O. n. 396. *Hall. Hist. v.* 1. 172.

O. seu Caput gallinaceum. Raii Syn. 327. *Ger. Em.* 1243. *f.*

O. major, siliculis echinatis cristatis in spica digestis. Moris. v. 2. 131. *sect. 2. t.* 11. *f.* 10.

Caput gallinaceum Belgarum. *Lob. Ic. v. 2. 81. f.*

Polygala multorum. *Dalech. Hist. 488. f.*

Polygalon Gesneri. *Bauh. Hist. v. 2. 335. f.*

On dry chalky hills and open downs, in various parts of England.

Perennial. *June, July.*

Root rather woody. Stems several, recumbent, 2 or 3 feet in length, round, furrowed, smooth, leafy, not much branched.

Leaves of many pairs of elliptic-oblong, uniform, pointed, entire leaflets; smooth above; often a little hairy beneath; the terminal one like the rest. Stipulas ovate, pointed, entire. Flower-stalks axillary, ascending, longer than the leaves, each bearing a dense tapering spike, rather than a cluster, of handsome, variegated, crimson flowers, with numerous narrow membranous bracteas interspersed. Legumes erect, semiorbicular, hard, bordered with sharp flat teeth, hairy at the sides, and strongly reticulated with prominent, partly spinous, ribs or veins.

A well-known object of cultivation, as fodder for cattle, on dry, barren, especially chalky or marly, ground, in open situations. It fails where the soil is damp, or the field overshadowed with trees. Having been first introduced to the farmer from France, the plant brought its French name of Saint-foin along with it; and Cock's-head, by which it was before known as a native of England, is become obsolete.

365. ASTRAGALUS. Milk-vetch.

Linn. Gen. 385. Juss. 358. Fl. Br. 779. Tourn. t. 233. Lam. t. 622. Gærtn. t. 154.

Cal. tubular, permanent, with 5 acute teeth; the lower ones gradually longest. *Cor.* of 5 petals; standard ovate-oblong, obtuse, erect, longer than the rest; wings oblong, somewhat half-ovate, obtuse, shorter than the standard; keel of 2 combined petals, as long as the wings, rounded in front, their claws separate. *Filam.* 10; 9 in one compressed tube, open above; the tenth capillary, usually shorter, quite distinct. *Anth.* roundish. *Germ.* linear-oblong, compressed. *Style* awl-shaped, ascending. *Stigma* obtuse. *Legume* variously shaped, more or less tumid, of 2 longitudinal cells; the partition double, more or less complete, from the inflexion of the margin of each valve, opposite to the receptacles. *Seeds* one or more, kidney-shaped.

A vast genus of herbaceous or shrubby plants, seldom annual, natives of every quarter of the globe, but mostly of Europe, or the north of Asia. *Leaves* alternate, numerous pinnate, uniform, entire, with a terminal leaflet;

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no tendrils. *Stipulas* simple. *Fl.* spiked, clustered, or tufted, purple, yellow, or whitish. *Legumes* of the greatest variety of forms, even in species otherwise nearly allied.

1. *A. glycyphyllos*. Sweet Milk-vetch. Wild Liquorice.

Stem prostrate. *Legumes* obscurely triangular, incurved. Leaves longer than the flower-stalks; leaflets ova.

A. glycyphyllos. *Linn. Sp. Pl.* 1067. *Willd. v. 3.* 1276. *Fl. Br.* 779. *Engl. Bot. v. 3. t.* 203. *Hook. Scot.* 217.

A. n. 413. *Hall. Hist. v. 1.* 180.

A. luteus perennis procumbens vulgaris, sive sylvestris. *Raii Syn.* 326. *Moris. v. 2.* 107. *sect. 2. t. 9. f.* 8.

Astragalus. *Riv. Tetrap. Irr. t.* 103.

Hedysarum glycyrrhizatum. *Ger. Em.* 1233. *f.*

Fœnogræcum sylvestre. *Trag. Hist.* 599. *f.*

Glycyrrhiza sylvestris. *Dalech. Hist.* 251. *f.*

In woods, thickets, the borders of fields, or at the sides of hills, on a chalky or gravelly soil.

Perennial. *June.*

Root perpendicular, running deep into the earth, simple at the crown. *Stems* several, 2 or 3 feet long, prostrate among grass or other plants, leafy, angular, nearly smooth, scarcely branched. *Leaves* a span long, of 9 or 11 uniform, oval, bluntish, smooth, bright green *leaflets*, about an inch in length. *Stipulas* ovate-lanceolate, entire. *Fl.* pale sulphur-coloured, in ovate *spikes*, on stout axillary *stalks*, much shorter than the adjoining leaf. *Bractæas* solitary under each flower, awl-shaped. *Legumes* full an inch long, nearly cylindrical, with a slight longitudinal furrow, curved upwards, pointed, smooth and even. *Seeds* 7 or 8, yellowish.

The *leaves* have at first a sweetish taste, soon changing on the palate to a nauseous bitter. Cattle are not fond of them, nor is this plant applied to any agricultural use.

2. *A. hypoglottis*. Purple Mountain Milk-vetch.

Stem prostrate. Flowers in round heads. *Legumes* ovate, deeply channelled along the back, compressed, hairy; hooked at the point. *Leaflets* blunt.

A. hypoglottis. *Linn. Mant.* 2. 274. *Willd. v. 3.* 1285. *Fl. Br.* 780. *Engl. Bot. v. 4. t.* 274. *Hook. Scot.* 217. *Sibth.* 227.

A. arenarius. *Huds.* 323. *Fl. Dan. t.* 614.

A. Danicus. *Retz. Obs. fasc.* 3. 41.

A. epiglottis. *Dicks. H. Sicc. fasc.* 1. 13; but not really so.

A. incanus parvus purpureus nostras. *Pluk. Almag.* 59; with wrong synonyms of the *Bauhins*. *Raii Syn.* 326. *t. 12. f.* 3.

On open mountainous heaths, in a chalky or sandy soil; also on the sea coast.

Upon Newmarket and Royston heaths, Gogmagog hills, &c. *Ray*. Plentiful near Doncaster. *Richardson*. On Swaffham heath, Norfolk. *Mr. Crowe and Mr. Woodward*. On several parts of the sea coast in Scotland. *With*. Beyond New-haven, near Edinburgh.

Perennial. *June, July*.

Root creeping, woody, though slender. *Stems* several, prostrate, leafy, zigzag, but little branched, from 2 to 5 inches long, somewhat hairy. *Leaves* of numerous little ovate blunt dark green leaflets, coarsely hairy on both sides. *Stipulas* ovate. *Flower-stalks* few, axillary or terminal, ascending, usually longer than the leaves, each bearing a round head, of several oblong, upright flowers, variegated with purplish blue and white. *Legumes* dark brown, clothed with white hairs. The hairs of the *calyx*, as well as of the *flower-stalks*, are black and white intermixed; a frequent circumstance in this genus. Sometimes the *corolla* is white.

3. *A. uralensis*. Hairy Mountain Milk-vetch.

Stem none. *Stalk* upright, taller than the leaves. *Legumes* oblong, tumid, pointed, shaggy, erect. *Leaflets* ovate, acute, all over silky like the *calyx*.

A. uralensis. *Linn. Sp. Pl.* 1071. *Willd. v.* 3. 1312. *Fl. Br.* 780. *Engl. Bot. v.* 7. *t.* 466. *Lightf.* 401. *t.* 17. *Hook. Scot.* 216. *Jacq. Misc. v.* 1. 150. *Ic. Rar. t.* 155.

A. n. 410. *Hall. Hist. v.* 1. 179. *t.* 14. *f.* 3.

A. alpinus violaceus, acuto sericeo folio. *Hall. Opusc.* 308. *t.* 2.

On the Scottish mountains, in a sandy soil.

Perennial. *July*.

Root woody. Whole *herb* remarkable for its shining silky hairiness, which the delineator of *Engl. Bot.*, generally so correct, has scarcely at all expressed. *Leaves* all radical, stalked, with a pair of large, ovate, pointed, membranous, veiny *stipulas*, united to the base of each *footstalk*; *leaflets* numerous, opposite or alternate, ovate, acute, the upper ones gradually smaller. *Foot-stalks* often permanent in a naked state, but not hardened into spines. *Flower-stalks* solitary, or in pairs, erect, firm, hairy, taller than the leaves. *Fl.* of a rich blueish purple, rarely white, in round dense heads, with an oblong *bractea* to each flower. *Cal.* tubular, clothed with dense, close, black as well as white hairs; its teeth short, bluntish. *Legume* ovate-oblong, pointed, brown, silky, with a membranous partition. *Stigma* permanent, somewhat capitate.

A very handsome species, even in a dry state, the *flowers* often retaining much of their colour, and the herbage all its brilliancy.

4. *A. campestris*. Yellowish Mountain Milk-vetch.

Stem none. Stalk ascending. Legumes ovate, inflated, hairy, erect. Leaflets lanceolate, acute, somewhat hairy.

A. campestris. *Linn. Sp. Pl.* 1072. *Willd. v. 3.* 1317. *Comp. ed. 4.* 123. *Engl. Bot. v. 36. t.* 2522. *Hook. Scot.* 217.

A. sordidus. *Willd. v. 3.* 1313; with erroneous remarks.

A. uralensis. *Fl. Dan. t.* 1041.

A. n. 406. *Hall. Hist. v. 1.* 177. *t.* 13.

A. perennis supinus, foliis et siliquis hispidis, flore luteo. *Buxb. Hallens.* 32; according to *Linnæus*.

On highland rocks in Scotland.

Upon a high rock, on one of the mountains at the head of Clova, Angusshire, near the White Water, in great abundance. *Mr. G. Don.*

Perennial. *July.*

In size and habit much like the last, but the *leaflets* are narrower, more numerous, much less silky, being only besprinkled with shining hairs, and often quite smooth, except the mid-rib. *Flower-stalks* rather less upright, sometimes recumbent. *Fl.* cream-coloured, or buff; the *keel* and *wings* tinged with purple. *Legume* more ovate, with a straight point, less oblique than in *A. uralensis*, covered like the *calyx*, with short, spreading, black as well as white, hairs.

366. TRIFOLIUM. Trefoil, Clover, and Melilot.

Linn. Gen. 387. *Juss.* 355. *Fl. Br.* 781. *Sm. in Rees's Cyclop. v. 36.* *Tourn. t.* 228. *Lam. t.* 613. *Gærtn. t.* 153.

Melilotus. *Juss.* 356. *Tourn. t.* 229. *Lam. t.* 613.

Cal. tubular, variously and unequally 5-toothed, permanent; the tube, or the teeth, often greatly enlarged, or changed. *Cor.* of 4 petals, all more or less decidedly united by their long claws, mostly permanent, withering; standard reflexed; wings oblong, direct, shorter than the standard; keel of one petal, rather shorter than the wings. *Filam.* 10; 9 in one split compressed tube; the tenth capillary, distinct. *Anth.* roundish. *Germ.* oblong-ovate. *Style* awl-shaped, curved upwards. *Stigma* simple, smooth. *Legume* short, membranous, rarely coriaceous, of 1 valve, and 1 cell, not bursting, scarcely exceeding the calyx in length, deciduous. *Seeds* 1 to 4, roundish, very smooth.

An extensive genus of herbaceous plants, natives of cold or temperate climates, either perennial or annual. *Stems* branched. *Leaves* alternate, more or less stalked, universally ternate, in one exotic instance only, *T. Lupinas-*

ter, quinate; *leaflets* equal, either toothed or entire, obovate, rarely linear. *Stipulas* membranous, ribbed, united in pairs to the bottom of each *footstalk*. *Fl.* terminal or lateral, either tufted, capitate, spiked, or clustered, generally on a simple common stalk, rarely fragrant, their colour red, purplish, pale blue, white or yellow. Many of the species are highly important as food for cattle, either fresh, or in the state of hay, often acquiring a fragrant scent in drying.

Linnæus found *Trifolium*, though a most natural genus, extremely difficult to define, as every botanist must. He thought it necessary to admit the *inflorescence*, as “a little *umbel*, or *head*, with a *common receptacle*,” into his generic character; but this is neither correct in principle, nor in fact, and I have ventured to discard it.

* *Flowers in clusters or spikes. Seeds 1 or more. Melilotus.*

1. *T. officinale*. Common Melilot.

Clusters unilateral. Legume prominent, acute, transversely wrinkled, hairy, with two seeds. Stem erect. *Stipulas* awl-shaped.

T. officinale. *Fl. Br.* 781. *Engl. Bot. v.* 19. *t.* 1340. *Willd. v.* 3. 1355. *Hook. Scot.* 217.

T. Melilotus-officinalis. *Linn. Sp. Pl.* 1078. *Huds.* 323. *Mart. Rust. t.* 72. *Fl. Dan. t.* 934. *Sincl. ed.* 2. 393. *Bull. Fr. t.* 255.

T. odoratum, seu *Melilotus fruticosa lutea vulgaris vel officinarum.* *Moris. v.* 2. 161. *sect. 2. t.* 16. *f.* 2.

T. odoratum, sive *Melilotus.* *Dod. Pempt.* 567. *f.*

Melilotus vulgaris. *Raii Syn.* 331. *Trag. Hist.* 591. *f.* *Dalech. Hist.* 511. *f.*

M. n. 362. *Hall. Hist. v.* 1. 158.

Saxifraga lutea. *Fuchs. Hist.* 749. *f.*

Lotus sylvestris. *Fuchs. Ic.* 436. *f.*

L. urbana. *Matth. Valgr.* 505. *f.* *Camer. Epit.* 893. *f.*

In thickets, hedges, and the borders of fields; sometimes among corn.

Annual. *June, July.*

Root tapering. *Stem* 2 or 3 feet high, erect, branched, leafy, angular, furrowed, smooth. *Leaflets* obovate, narrow, serrated, dark green, smooth; the partial stalk of the middle one rather the longest. *Clusters* 2 inches or more in length, on long axillary stalks. *Fl.* numerous, all drooping towards one side, of a full yellow, veiny. *Standard* folded and keeled, notched, but little longer than the *keel* and *wings*, scarcely reflexed. *Stigma*

bluntish. *Legumes* pendulous, elliptical, tapering at each end, hairy, less strongly wrinkled than in most exotic species of this section, each barely twice the length of the *calyx*.

The whole plant in drying acquires a scent like new hay, but far stronger. It is sometimes cultivated for fodder, and if cut before flowering, will last several years. The *seeds*, when mixed with bread corn, give it a nauseous flavour. Melilot is out of use in medicine; though it served too long to give a green colour, and an odious scent, to a sort of plaster called by its name, of no use whatever.

** *Fl. capitate. Seeds several.*

2. *T. ornithopodioides*. Bird's-foot Trefoil.

Flowers about three together. Legume prominent, eight-seeded, twice as long as the calyx. Stems reclining.

T. ornithopodioides. *Linn. Sp. Pl.* 1078. *Willd. v. 3.* 1356. *Engl. Bot. v. 15. t.* 1047. *Curt. Lond. fasc. 2. t.* 53. *Hook. Scot.* 218. *Fl. Dan. t.* 368.

T. siliculosum, *loto* affine, *siliquis ornithopodii*. *Pluk. Almag.* 375. *Phyt. t.* 68. *f.* 1.

T. siliquis ornithopodii nostras. *Raii Syn. ed.* 2. 195.

Fœnugræcum humile repens, ornithopodii siliquis brevibus erectis. *Dill. in Raii Syn.* 331.

In barren gravelly grassy pastures.

On several heaths about London. *Curtis*. Near Tadcaster, and Oxford; also on sandy banks by the sea, at Tolesbury, Essex. *Ray*. On Mushold heath, near Norwich. *Mr. Pitchford*.

Annual. *June, July*.

Root fibrous, with many small fleshy knobs, like those of *Vicia lathyroides*. *Stems* several, spreading flat on the ground, smooth, leafy, mostly simple. *Leaflets* inversely heart-shaped, more or less serrated, smooth, their partial stalks all equally short. *Stipulas* ovate with long taper points. *Stalks* numerous, axillary, solitary, each bearing 2 or 3 long, pale reddish, *flowers*, the claws of whose *petals* are slender, and all distinct. *Calyx-teeth* also very slender, shorter than the oblong, moderately compressed, obtuse, transversely furrowed, slightly hairy, *legume*, which usually contains 8, *Ray* says sometimes 10, oval *seeds*.

This species has certainly as little the character of *Melilotus* as of *Trigonella*, to both which it has been referred. It can scarcely, without violence, be retained in *Trifolium*. The claws of the *petals* are all distinct; the *legume* separates into 2 valves, without falling, and the *seeds* are more numerous than in any other of the present genus. Yet nobody has thought fit to make it a distinct one, however plausible might be the reasons for such a measure.

3. *T. repens*. White Trefoil. Dutch Clover.

Heads globose. Flowers somewhat stalked. Legume within the calyx, four-seeded. Stems creeping, solid.

T. repens. Linn. *Sp. Pl.* 1080. Willd. v. 3. 1359. *Fl. Br.* 782. *Engl. Bot.* v. 25. t. 1769. Curt. *Lond. fasc.* 3. t. 46. Mart. *Rust.* t. 34. Hook. *Scot.* 218. Sincl. *ed.* 2. 223. *Fl. Dan.* t. 990. Riv. *Tetrap. Irr.* t. 13. f. 2. Ehrh. *Pl. Off.* 398.

T. n. 367. Hall. *Hist.* v. 1. 160.

T. pratense album. Raii *Syn.* 327. Bauh. *Pin.* 327; with some wrong references.

T. pratense album vulgare odoratum. Moris. v. 2. 137. *sect.* 2. t. 12. f. 2.

T. pratense. Ger. *Em.* 1185. f; not the description. Dod. *Pempt.* 565. f.

Trifolium pratense corymbiferum majus repens. Mich. *Gen.* 26. 27. n. 1—9. t. 25. f. 1, 3, 4.

In meadows and pastures, very common.

Perennial. May—September.

Roots fibrous. *Stems* prostrate, creeping extensively with numerous radicles, branched chiefly near their origin, round, smooth, leafy, internally solid, by which character all the varieties are essentially distinguished from *T. hybridum* of Linnæus. *Leaves* on long upright *footstalks*; *leaflets* on short, equal partial-stalks, inversely heart-shaped, or roundish, finely toothed, smooth, dark green, variegated, mostly with a pale, curved, transverse stripe, sometimes with dark purple, or blackish stains; the under side often reddish. *Flower-stalks* rising above the leaves, erect, or ascending, angular, smooth, each bearing a dense, umbellate, flattish head of numerous white *flowers*, turning brown as they fade, the *corolla* remaining long in a withered state, enclosing the little smooth oblong *legume*, containing 3 or 4 yellowish *seeds*, till they fall off together.

In a rich moist soil the *stems* grow more upright, and the whole herb is more luxuriant. Such a shape it usually assumes in low ground, newly broken up, where this Trefoil is one of the first spontaneous productions. As a valuable fodder in dry autumnal months, it is well known, making an excellent bottom in pastures. The *Melilotus Parisiensis*, &c. of Vaillant, t. 22. f. 1, is now judged to be a different species, and is named *T. Vaillantii* by the writer of this, in Rees's *Cyclopædia*, n. 23.

4. *T. suffocatum*. Suffocated Trefoil.

Heads sessile, lateral, roundish. Legume concealed, two-seeded. Calyx nearly smooth, with lanceolate, acute, recurved teeth, longer than the corolla.

T. suffocatum. Linn. *Mant.* 2. 276. Willd. v. 3. 1378. *Fl. Br.* 790.

300 **DIADELPHIA—DECANDRIA.** *Trifolium.*

Comp. ed. 4. 124. *Engl. Bot.* v. 15. t. 1049. *Tr. of Linn. Soc.* v. 2. 357. *Jacq. Hort. Vind.* v. 1. 24. t. 60.

T. minimum supinum, flosculorum et seminum globulis plurimis confertim ad radicem nascentibus. *Raii Hist.* v. 1. 942.

On the sandy sea coast.

In the loose sand of the beach at Yarmouth. *Mr. Wigg.* At Lowes-toft. *Miss Temple.* At Landguard Fort plentifully. *Sir T. G. Cullum, Bart., and Mr. W. R. Notcutt.*

Annual. *June, July.*

Root tapering. Whole herb, except a few leaves, generally buried in the loose dry sand. *Stems* several, horizontal, short, zigzag, leafy, round, smooth. *Leaves* on long footstalks, with a pair of large, ovate, combined, pale, spreading-pointed stipulas; leaflets wedge-shaped, smooth, finely toothed. *Fl.* numerous, in many round axillary heads. Tube of the calyx slightly hairy; teeth lanceolate acute, reflexed, scarcely enlarged after flowering. *Cor.* pale pink, much shorter than the calyx-teeth, closed, sheltering the organs of impregnation beneath the sand. *Legume* linear-oblong, containing 2 roundish, rather distant, yellowish seeds.

*** *Seeds single. Calyx generally hairy.*

5. *T. subterraneum.* Subterraneous Trefoil.

Heads hairy, of about four flowers. Involucrum central, reflexed, rigid, starry, embracing the fruit.

T. subterraneum. *Linn. Sp. Pl.* 1080. *Willd.* v. 3. 1361. *Fl. Br.* 783. *Engl. Bot.* v. 15. t. 1048. *Curt. Lond. fasc.* 2. t. 54. *Riv. Tetrap. Irr.* t. 13. f. 1.

T. pumilum supinum, flosculis longis albis. *Raii Syn.* 327. t. 13. f. 2.

T. blesense. *Dodart Mem.* 4to ed. 623. t. 34. f. 2.

T. album tricoccon subterraneum Gastonium reticulatum. *Moris.* v. 2. 138, sect. 2. t. 14. f. 5.

T. pratense supinum κατωελεψ, seu capite humi merso. *Barrel.* Ic. t. 881.

In dry gravelly pastures, and barren heathy situations.

Annual. *May.*

Root fibrous, with fleshy tubercles. *Stems* pressed close to the ground, spreading, round, hairy, leafy, from 3 to 6 inches long. *Leaflets* inversely heart-shaped, hairy on both sides, entire. *Stipulas* large, ovate, pointed, membranous, white or reddish, with green ribs. *Fl.* 3 or 4 on each stalk, at first erect, but before the fruit is perfected each stalk is bent to the earth, throwing out from its extremity, between the flowers, several thick white fibres, starry at their tips, which partly fix themselves in the ground, turning upwards to embrace the fruit. *Calyx-teeth* slender and hairy. *Pet.* much longer, white, slender, all united

into a long tube. *Legume* in the permanent tube of the calyx, roundish, thin, containing a solitary seed.

6. *T. ochroleucum*. Sulphur-coloured Trefoil.

Flowers in a solitary, terminal, hairy head. Stem erect, downy. Lower leaflets inversely heart-shaped. Lowest calyx-tooth thrice as long as the rest.

T. ochroleucum. Linn. *Syst. Nat. ed.* 12. v. 3. 233. *Syst. Veg. ed.* 14. 689; *syn. wrong.* Willd. v. 3. 1372. *Fl. Br.* 784. *Engl. Bot.* v. 17. t. 1224. *Curt. Lond. fasc.* 6. t. 49. *Mart. Rust. t.* 35. *Dicks. H. Sicc. fasc.* 3. 9. *Afzel. in Tr. of Linn. Soc.* v. 1. 229. *Jacq. Austr. t.* 40. *Ehrh. Pl. Select.* 19.

T. squarrosum. Linn. *Sp. Pl.* 1082; *excluding the synonyms.* Willd. v. 3. 1370.

T. n. 378. *Hall. Hist.* v. 1. 164.

T. pratense hirsutum majus, flore albo-sulphureo. *Raii Syn.* 328.

T. lagopoides annuum hirsutum, pallide luteum seu ochroleucum. *Moris.* v. 2. 141. *sect.* 2. t. 12. f. 12; *separate calyx bad.*

In pastures, fields, and thickets, on a dry gravelly, or chalky, soil. Perennial? *June, July.*

Root somewhat branched at the crown. *Stems* usually several, erect, 12 or 18 inches high, scarcely branched, leafy, round, clothed with numerous, fine, upright, tawny hairs. *Leaves* remote, the two uppermost only opposite; lower ones on very long stalks, their *leaflets* small, rounded, inversely heart-shaped; upper on shorter stalks, with longer and narrower *leaflets*; all entire, striated, finely hairy, of a darkish green. *Stipulas* lanceolate, simply ribbed, hairy, long and narrow, combined sometimes for more than half their length. *Fl.* pale sulphur-coloured, in roundish, dense, solitary, terminal *heads*, each on a hairy stalk, between the two uppermost leaves. *Keel* strictly of one petal. *Cal.* cylindrical, deeply furrowed, with slender, hairy, straight teeth, all unequal, but the lowermost is thrice the length of the rest, giving the whole head, when in seed, a bristly aspect. In this state it seems not to have been much noticed by English botanists; so that when found in a cultivated field, in autumn, by the late Sir Thomas Gage, it was thought a new species, but proved on comparison the *T. squarrosum*, as well as *ochroleucum*, of the Linnæan herbarium. *Legume* membranous. *Seeds* solitary, yellow.

The synonym of Fuchsius, *Hist. t.* 818, and *Ic.* 472, cited in *Fl. Br.* belongs to the foreign *T. montanum*.

T. ochroleucum has not been turned to any agricultural use, nor does it appear to possess any valuable properties. The herbage is very sparing, and not lasting. I suspect the plant to be annual, that being the true reason why Mr. Curtis could never preserve it in his garden.

7. *T. pratense*. Common Purple Clover. Honey-suckle Trefoil.

Spikes dense. Stems ascending. Petals unequal. Calyx hairy; four of its teeth equal. Stipulas ovate, bristle-pointed.

T. pratense. *Linn. Sp. Pl.* 1082. *Willd. v. 3.* 1366. *Fl. Br.* 785. *Engl. Bot. v. 25. t. 1770.* *Afzel. in Tr. of Linn. Soc. v. 1.* 240. *Mart. Rust. t. 3.* *Sincl. ed. 2.* 221. *f.* *Hook. Scot.* 218. *Matth Valgr. v. 2.* 189. *f.* *Trag. Hist.* 586. *f.* *Ehrh. Pl. Off.* 408.

T. n. 377. *Hall. Hist. v. 1.* 163; excluding the reference to *Dodonæus*.

T. pratense purpureum. *Raii Syn.* 328. *Fuchs. Hist.* 817. *f.*
Trifolium. *Riv. Tetrap. Irr. t. 11. f. 1.*

β. *T. pratense*. *Mart. Rust. t. 3.* *Fl. Dan. t.* 989.

T. purpureum majus sativum, pratensi simile. *Raii Syn.* 328.

γ. With a white flower. *Afzel. as above,* 243. *With.* 652.

δ. *Trifolium pratense purpureum minus, foliis cordatis*. *Dill. in Raii Syn.* 328. *t. 13. f. 1.*

In meadows and pastures, especially on limestone or gravelly hills. Perennial. *May—September.*

Root branching at the crown; rather tap-shaped and woody below, its fibres often bearing minute fleshy granulations. *Stems* ascending, about a foot high, slightly branched, unequally leafy. roundish; clothed, in the upper part, with close fine hairs. *Leaflets* elliptical, more or less acute, entire, nearly smooth, with a pale crescent-like spot; they become by culture larger, more obtuse, and minutely toothed. The upper pair of *leaves* are mostly opposite, and their *footstalks* very much shorter than the lower ones. *Stipulas* ovate, broad, pale, with purple ribs interbranching near the margin, each stipula suddenly terminating in a bristle-shaped point. *Heads* terminal, solitary, ovate, obtuse, dense, of very numerous, sweet-scented, light purple *flowers*, rarely white. *Cal.* hairy, with 10 prominent ribs, and 4 usually equal, narrow teeth, the fifth, or lowermost, being somewhat longer than the rest. *Pet.* united to each other at the base, as well as to the *stamens*. *Legume* roundish, small and thin, with a yellowish *seed*.

One of the most valuable *artificial grasses*, as they are called, for fodder or hay, being, according to the observations of Mr. Sinclair, and other accurate inquirers, one of the most nutritious of its tribe.

8. *T. medium*. Zigzag Trefoil.

Spikes lax. Stems zigzag and branching. Petals nearly

equal. Stipulas tapering, converging. Two upper calyx-teeth rather the shortest.

T. medium. Linn. *Faun. Suec. ed. 2.* 558. *Huds. ed. 1.* 284. *Willd. v. 3.* 1367. *Fl. Br.* 786. *Engl. Bot. v. 3.* 190. *Mart. Rust. t. 2.* *Dicks. H. Sicc. fasc. 4.* 10. *Sincl. ed. 2.* 218. *f. Hook. Scot.* 218. *Fl. Dan. t.* 1273.

T. flexuosum. *Jacq. Austr. t.* 386. *Retz. Prodr.* 174. *Ehrh. Herb.* 58.

T. alpestre. *Huds.* 326.

T. n. 376. *Hall. Hist.* 163.

T. purpureum majus, foliis longioribus et angustioribus, floribus saturatoribus. *Raii Syn.* 328.

T. folio longiore, flore purpureo. *Riv. Tetrap. Irr. t. 12. f.* 1.

In elevated dry chalky pastures, or in gravelly ones with a clay bottom.

Perennial. *July.*

In general appearance this is very like the last species, but its qualities are widely different, though for some purposes, according to Mr. Sinclair, not inferior. Mr. Afzelius, in his most elaborate paper in the Linnæan Transactions, has clearly distinguished them. The *root* of the present plant is creeping and more uniformly perennial in cultivation. The *stems* are zigzag, and more branched. *Stipulas* longer, linear, tapering to a point, and stand parallel to each other. *Heads of flowers* rather larger and less dense. *Cal.* slightly hairy, except in the mouth; its 2 upper teeth shortest; the rest gradually, but not very strikingly, longer. *Leaflets* elliptical, various in width, a little glaucous underneath, chiefly hairy at the margin.

The best properties of the present kind of Clover, or Trefoil, seem to be its power of resisting drought, and its thriving on cold tenacious soils. Yet Mr. Sinclair reports it to be preferable to *T. pratense* for permanent pasture on light soils. Its produce of nutritious matter however is said to be but half as much as that of *T. pratense*.

9. *T. maritimum.* Teasel-headed Trefoil.

Spikes ovate, somewhat hairy. Stipulas lanceolate, erect. Calyx-teeth after flowering dilated, leafy, and spreading. Leaflets obovate-oblong.

T. maritimum. *Huds. ed. 1.* 284. *Willd. v. 3.* 1370. *Fl. Br.* 786. *Engl. Bot. v. 4. t.* 220. *Dicks. H. Sicc. fasc. 7.* 8. *Hook. Lond. t.* 57.

T. stellatum. *Huds. ed. 2.* 326. *not of Linnæus.*

T. stellatum glabrum. *Raii Syn.* 329. *Ger. Em.* 1208. *no f. Pluk. Almag.* 376. *Phyt. t.* 113. *f.* 4.

T. spicatum minus, flore minore dilutè purpureo. *Moris. v. 2. sect. 2. t.* 14. *f.; no descr.*

In muddy salt-marshes.

304 DIADELPHIA—DECANDRIA. Trifolium.

On the east and south coasts of England, from Norfolk to Somersetshire, in various places.

Annual. *June, July.*

Root tapering. *Herb* clothed with fine, soft, more or less spreading, hairs. *Stems* spreading, often recumbent, a foot or more in length, branched, leafy, round, or bluntly angular, striated. *Leaves* alternate, except the uppermost pair; the lower ones on long slender *footstalks*; *leaflets* dark green, of a narrow obovate figure; obtuse, or notched, obscurely toothed towards the extremity, single-ribbed, hairy on both sides. *Stipulas* very long, narrow, straight, taper-pointed, hairy. *Spikes* terminal, stalked, solitary, short, almost globular. *Calyx* with 10 strong ribs, and deep intermediate furrows, hairy chiefly at the summit of the tube; its sharp teeth at first erect, awl-shaped, a little unequal, shorter than the *corolla*, becoming after flowering much enlarged, leafy, three-ribbed, dark green, spreading, and still more unequal, the lower one largest. *Pet.* pale red; standard a little the longest. *Legume* thin, roundish, in the tube of the calyx. *Seed*, as far as I have seen, always solitary, roundish, brown, protuberant at one edge where the *radicle* is lodged.

This is one of that tribe of Trefoils distinguished by the teeth of the *calyx* becoming remarkably leafy, and much dilated, as the *flower* fades, and the *seed* ripens. In this it agrees with the following, but differs from *pratense* and its allies, as well as from *arvense*, whose teeth, though permanent and rigid, do not become leafy or dilated. *T. maritimum* makes a part of the food of cattle in its native marshes, but has not been cultivated, or particularly noticed, by the farmer.

10. *T. stellatum*. Starry-headed Trefoil.

Spikes hairy, roundish. *Stipulas* elliptical. *Calyx*-teeth longer than the *corolla*; after flowering dilated, leafy, reticulated and spreading; tube closed. *Leaflets* inversely heart-shaped.

T. stellatum. *Linn. Sp. Pl.* 1083. *Willd. v. 3.* 1373. *Engl. Bot. v. 22. t.* 1545. *Comp. ed.* 4. 123. *Hook. Lond. t.* 95. *Bauh. Pin.* 329. *Prodr.* 143. *Ger. Em.* 1208.

T. stellatum purpureum monspessulanum. *Bauh. Hist. v. 2.* 376. *f. Moris. v. 2.* 143. *sect. 2. t.* 13. *f. 9.*

Lagopus minor erectus, capite globoso stellato, floribus purpureis. *Barrel. Ic. t.* 860.

On the south coast of England, very rare.

Between Shoreham harbour, Sussex, and the sea, in great plenty.

Mr. Borrer.

Annual. *July, August.*

Root small and slender. *Herb* variable in luxuriance, always considerably hairy, especially the spreading, mostly branching,

stems. *Leaflets* wedge-shaped, or inversely heart-shaped, abrupt, toothed, shorter than the foregoing, and of a brighter green. *Stipulas* remarkably different, being short and broad, elliptical, pointed, white with green ribs, hairy. *Fl.* in stalked round heads, or somewhat ovate spikes, erect, crowded, light crimson. *Cal.* densely clothed all over externally with long, upright, silky, jointed hairs; teeth nearly or quite equal, awl-shaped, erect, taller than the *corolla* and twice the length of the furrowed funnel-shaped tube; after flowering enlarged, leafy, spreading; smooth and reticulated with veins at the inside, and tinged at the base with red; the mouth curiously closed up, with dense, entangled, woolly hairs. *Legume* concealed, filling the tube, oval, with a single pale *seed*.

T. alopecurum majus, flore purpureo, stellato capite, *Barrel. Ic. t. 755*, which Linnæus thought the same plant, with more oblong heads or spikes, is rather *T. incarnatum*, Haller's *n. 374*.

11. *T. arvense*. Hare's-foot Trefoil.

Spikes cylindrical, very hairy. *Stipulas* lanceolate, bristle-pointed. *Calyx*-teeth longer than the *corolla*, permanently bristle-shaped. *Leaflets* linear-obovate.

T. arvense. *Linn. Sp. Pl.* 1083. *Willd. v. 3.* 1373. *Fl. Br.* 787. *Engl. Bot. v. 14, t. 944.* *Curt. Lond. fasc. 6. t. 50.* *Hook. Scot. 218.* *Fl. Dan. t. 724.* *Ehrh. Pl. Off.* 418.

T. n. 373. *Hall. Hist. v. 1.* 162.

T. arvense humile spicatum, seu *Lagopus*. *Raii Syn.* 330.

T. lagopoides purpureum arvense humile annuum, seu *Lagopus minimus vulgaris*. *Moris. v. 2.* 141. *sect. 2. t. 13. f. 8.*

Lagopus. *Fuchs. Hist.* 494. *f. Ic. 281. f. Riv. Tetrap. Irr. t. 15.* *Matth. Valgr. v. 2.* 332. *f. Camer. Epit. 724. f.*

L. trifolius quorundam. *Bauh. Hist. v. 2.* 377. *f.*

L. vulgaris. *Dalech. Hist.* 441. *f. f.*

L. angustifolia minor erectior. *Barrel. Ic. t. 901.*

Lagopodium, *Pes leporis*. *Ger. Em.* 1193. *f.*

Lotus campestris. *Trag. Hist.* 595. *f.*

β. *Lagopus perpusillus supinus perelegans maritimus*. *Dill. in Raii Syn.* 330. *t. 14. f. 2.*

In sandy barren fields, very common, a useless, if not troublesome, weed.

Annual. *July, August.*

Root small, slender. *Herb* extremely variable in luxuriance, all over finely hairy, of a dull green. *Stem* erect, in the small maritime variety β procumbent, much branched, round, leafy, very hairy. *Leaflets* narrow, somewhat obovate, abrupt, obscurely serrated at the end, with a small bristly point. *Foot-stalks* shorter than the leaflets. *Stipulas* ovate, oblique, membranous, with red ribs, and each ending in a long, green, taper

point. *Spikes* numerous, terminal, stalked, solitary, erect, an inch, more or less, in length, cylindrical, dense, obtuse, hoary, with a purple tinge. *Cal.* very hairy, especially its bristle-shaped teeth, which are twice the length of the tube, much exceeding the *corolla*, equal; reddish in the flower; spreading as the seed ripens, but though somewhat hardened, always continuing slender. *Pet.* white, or pale pink, their claws scarcely combined; standard broad, ovate. *Legume* minute, membranous, with a single seed.

Sometimes very dwarfish, and densely silky, on barren sands near the sea, when the *root* becomes elongated in search of nourishment, but never, I believe, perennial. See variety β .

12. *T. scabrum.* Rough Rigid Trefoil.

Heads sessile, axillary, ovate. Calyx-teeth unequal, lanceolate, rigid; finally recurved. Stems procumbent.

T. scabrum. *Linn. Sp. Pl.* 1084. *Willd. v.* 3. 1374. *Fl. Br.* 788. *Engl. Bot. v.* 13. *t.* 903. *Curt. Lond. fasc.* 6. *t.* 48. *Hook. Scot.* 219.

T. n. 371. *Hall. Hist. v.* 1. 161.

T. flosculis albis, in glomerulis oblongis asperis, cauliculis proximè adnatis. *Raii Syn.* 329. *Vaill. Par.* 196. *t.* 33. *f.* 1.

T. minus, capite subrotundo parvo albo et echinato. *Barrel. Ic. t.* 870.

T. cujus caules ex geniculis glomerulos oblongos proferunt. *Bauh. Hist. v.* 2. 378. *f.*

In chalky, or dry sandy, fields.

On Newmarket heath. *Ray.* Between Northfleet and Gravesend. *Dill.* About Croydon. *Curt.* Near Bungay. *Mr. Woodward.* On Snettisham beach, and in an old chalk-pit near Wells, Norfolk. *Mr. Crowe.* At Wick cliffs; *Mr. Swayne. With.* On Cromer Cliffs, Norfolk. [Upon sandy ground near the sea, South Kent, common. *Mr. G. E. Smith.*]

Annual. *May, June.*

Root tapering. Whole *herb* very rigid, and harsh to the touch, especially when in seed. *Stems* several, from 3 to 9 inches long, procumbent, rigid, round, sometimes zigzag, leafy, hairy, scarcely branched except from the bottom. *Leaflets* obovate, or somewhat heart-shaped, with many prominent transverse ribs, hairy, minutely but sharply toothed, longer or shorter than their common footstalk. *Stipulas* membranous, ribbed, ovate, pointed. *Heads* numerous, axillary and terminal, solitary, sessile, ovate, dense, hairy. *Cal.* furrowed; its teeth green, lanceolate, spinous, a little unequal, always spreading, but when ripening seed strongly recurved, which gives the harshness above described. *Legume* membranous, whitish, enclosed in the calyx-tube. *Seed* solitary, yellowish. A useless weed.

13. *T. glomeratum*. Smooth Round-headed Trefoil.

Heads sessile, axillary, hemispherical, smooth. Calyx-teeth heart-shaped, reflexed, veiny. Stems prostrate.

T. glomeratum. *Linn. Sp. Pl.* 1084. *Willd. v. 3.* 1375. *Fl. Br.* 789. *Engl. Bot. v. 15. t.* 1063. *Curt. Lond. fasc. 4. t.* 51.

T. cum glomerulis ad caulium nodos rotundis. *Raii Syn.* 329.

T. supinum cum glomerulis ad caulium nodos globosis, floribus purpurantibus. *Raii Hist. v. 1.* 948. *Pluk. Almag.* 377. *Phyt. t.* 113. *f.* 5.

T. parvum rectum, flore glomerato cum unguiculis. *Bauh. Hist. v. 2.* 378. *f.*

T. arvense supinum verticillatum. *Barrel. Ic. t.* 882.

In gravelly fields and pastures, chiefly in the east and south of England.

About Saxmundham, Suffolk, and about London. *Ray*. In the isle of Shepey. *Huds*. On Kew Green, and Hanwell Heath, Middlesex. *Bishop of Carlisle*. On the bath hills near Bungay, Suffolk. *Mr. Woodward*. At Yarmouth. *Mr. D. Turner*. In a pasture adjoining to Mackerel's tower, Norwich. [At Sandgate, Kent. *Mr. G. E. Smith*.]

Annual. *June*.

Whole herb very smooth, with a tapering, branching, tuberculated root. Stems quite prostrate, straight, slender, striated, but little branched, from 3 to 12 inches long. Leaves rather distant, on footstalks of various lengths; leaflets obovate, abrupt, finely toothed, veiny, sometimes marked with a pale transverse spot. Stipulas ovate or oblong, membranous, ribbed, taper-pointed. Heads axillary and terminal, solitary, sessile, hemispherical, or nearly globular, many-flowered, quite smooth in every part. Cal. bell-shaped, strongly furrowed, with ten ribs, pale or reddish; the teeth nearly equal, heart-shaped, pointed, reflexed, veiny, green and leafy. Cor. longer than the calyx; standard rose-coloured, striated; wings and keel shorter and paler. Legume round, very small, with a solitary seed.

This is neither a Scottish nor a Swiss plant. The small reflexed calyx-teeth, leafy in colour and texture, always quite smooth, readily distinguish it from all our other species.

14. *T. striatum*. Soft Knotted Trefoil.

Heads sessile, axillary and terminal, ovate. Calyx elliptical, furrowed, hairy; with straight bristle-shaped teeth. Stems procumbent.

T. striatum. *Linn. Sp. Pl.* 1085. *Willd. v. 3.* 1376. *Fl. Br.* 790. *Engl. Bot. v. 26. t.* 1843. *Hook. Scot.* 219. *Ehrh. Herb.* 88.

T. parvum hirsutum, floribus parvis dilutè purpureis, in glomerulis mollioribus et oblongis, semine magno. *Raii Syn.* 329. *t.* 13. *f.* 3. *Vaill. Par.* 196. *t.* 33. *f.* 2.

308 **DIADELPHIA—DECANDRIA.** *Trifolium.*

T. minus villosum, purpureo capite parvo echinato. *Barrel. Ic. t. 865.*

In dry, barren, sandy fields and pastures.

Annual. *June.*

Root slender, tuberculated. *Stems* several, procumbent, various in length and luxuriance, round, branched, leafy, downy, often zigzag. *Leaflets* obovate, sometimes acute, or somewhat pointed, finely toothed, downy. *Stipulas* ovate, broad, pointed, membranous, ribbed. *Heads* some axillary, more terminal, ovate. *Cal.* elliptical, tumid, with 10 deep furrows, and clothed with fine soft hairs; the teeth unequal, not half the length of the tube, awl-shaped, green, spinous-pointed, fringed, somewhat lengthened out after flowering, but always continuing straight. *Cor.* pale rose-coloured, about as long as the calyx. *Legume* membranous, with the rudiments of 2 seeds in an early state, one of which only comes to perfection, and fills the tube of the calyx, being thrice as large as the last.

These three procumbent species of *Trifolium* are clearly distinguished by their *calyx-teeth*, and the present is readily known by the touch from *T. scabrum*. Having rudiments of 2 seeds in the germen, it so far agrees with the *suffocatum*, hitherto arranged near it, and forms some exception to the proper character of this section; but only one seed being perfected, it is best placed with others so circumstanced, to which it is most closely allied.

**** *Calyx of the fruit inflated, bladdery.*

15. *T. fragiferum.* Strawberry-headed Trefoil.

Heads roundish. Calyx finally inflated, deflexed, with two terminal teeth. Stems creeping.

T. fragiferum. *Linn. Sp. Pl.* 1086. *Willd. v. 3.* 1380. *Fl. Br.* 791. *Engl. Bot. v. 15. t.* 1050. *Curt. Lond. fasc. 2. t.* 55. *Hook. Scot.* 219. *Raii Syn.* 329. *Fl. Dan. t.* 1042. *Clus. Cur. Post.* 39. *f. Moris. v. 2.* 144. *n.* 13, 14. *sect. 2. t.* 13. *f.* 14. *Ger. Em.* 1208. *f. Vaill. Par.* 195. *t.* 22. *f.* 2.

T. n. 370. *Hall. Hist. v. 1.* 161.

T. caule nudo, glomerulis glabris. *Bauh. Hist. v. 2.* 379. *f.*

In moist meadows, pastures, and osier holts, in a black boggy soil.

Perennial. *July, August.*

Root tapering, its fibres beset with fleshy granulations. *Herb* smooth, much resembling *T. repens*. *Stems* quite prostrate, creeping extensively with several fibrous radicles, round, leafy, many-flowered. *Leaves* on long spreading footstalks; leaflets dark green, unspotted, obovate, or inversely heart-shaped, finely toothed, striated with numerous transverse ribs. *Stipulas* large, whitish, with green veins, ovate, tapering into a long slender point. *Flower-stalks* axillary, solitary, erect, stout, angular,

taller than the leaves. *Heads* of *flowers* small, solitary, erect. *Pet.* rose-coloured, small and slender. *Cal.* 2-lipped, downy; the upper side, after flowering, becoming greatly enlarged, membranous, reticulated, inflated, and bent downward, terminating in 2 teeth, and assuming a blood-red colour, so that the whole *head*, in that state, much resembles a Hautboy Strawberry. *Legume* roundish, small in the bottom of the calyx, containing 2 seeds.

Cattle eat the herbage, but its produce is late and inconsiderable.

***** *Standards deflexed, dry and membranous.*

16. *T. procumbens.* Hop Trefoil.

Heads oval, many-flowered. Standard finally deflexed, furrowed. Stems spreading or procumbent. Common footstalk longest at the base.

T. procumbens. *Linn. Sp. Pl.* 1088. *Willd. v. 3.* 1383. *Fl. Br.* 792 and 1403. *Comp. ed.* 4. 124. *Engl. Bot. v. 14. t.* 945. *Hook. Scot.* 219. *Grev. Edin.* 162. *Fl. Dan. t.* 796. *Ehrh. Herb.* 93.

T. agrarium. *Huds.* 328. *Curt. Lond. fasc. 3. t.* 45. *Mart. Rust. t.* 121.

T. n. 363. *Hall. Hist. v. 1.* 159.

T. pratense luteum, capitulo lupuli, vel agrarium. *Raii Syn.* 330. *Vaill. Par.* 196. *t. 22. f.* 3.

T. pratense luteum foemina, flore pulchriore, sive lupulino. *Bauh. Hist. v. 2.* 381. *f.*

T. agrarium luteum, capitulo lupuli majus. *Moris. v. 2.* 142. *sect. 2. t. 13. f.* 1.

Lupulinum. *Riv. Tetrap. Irr. t.* 10. *f.* 1.

In dry gravelly fields and pastures.

Annual. *June, July.*

Root short, but strong and woody. *Stems* spreading widely, part of them procumbent, the central one, if not cropped by cattle, according to the Rev. Dr. Beeke's observations, erect, but this I have seldom been able to verify; they are leafy, hairy, but little branched, from 4 to 10 or 12 inches long; round below; angular above, where they turn more or less upwards. *Leaflets* obovate, notched, toothed, veiny, smooth, a little glaucous. *Common footstalks* smooth or a little hairy, various in length, but always longer than the partial stalk of the central leaflet. *Stipulas* half-ovate, acute, entire, ribbed, often fringed. *Heads* axillary, solitary, ovate, or roundish, erect, on partly hairy stalks, which are angular, not very stout, often reaching beyond the adjoining leaf. *Fl.* about 50. *Cal.* a little hairy, bell-shaped, with very unequal, direct, awl-shaped teeth. *Pet.* bright yellow, turning tawny as the seed ripens, all permanent; standard finally deflexed, dilated, strongly furrowed, dry and membranous, shel-

tering the *legume*, which is small, elliptical, pointed at each end.
Seed solitary, kidney-shaped.

For the real *T. agrarium* of Linnæus, see *Ehrh. Herb.* 29, *Dickson's Dried Plants* n. 80, and *Barrel. Ic. t.* 1024. This is always upright, much larger than the *procumbens*, with longer *flower-stalks*, and very large *heads*; being *T. aureum* of Pollich; *spadiceum* of Villars, not of Linnæus; and *T. n.* 365 of Haller; but this fine species is not a native of Britain.

17. *T. minus*. Lesser Yellow Trefoil.

Heads hemispherical. Flower-stalks straight, rigid. Standard nearly even. Stems prostrate. Common footstalk very short.

T. minus. *Relh.* 290. *Fl. Br.* 1403. *Comp. ed.* 4. 124. *Engl. Bot.* v. 18. t. 1256. *Hook. Scot.* 220.

T. filiforme. *Ehrh. Herb.* 49.

T. filiforme β. *Fl. Br.* 793.

T. procumbens. *Huds.* 328. *Curt. Lond. fasc.* 5. t. 53.

T. dubium. *Sibth.* 231. *Abbot* 163.

T. n. 364. *Hall. Hist. v.* 1. 159.

T. lupulinum alterum minus. *Raii Syn.* 330. t. 14. f. 3. *Hall. It. Helv.* 1. sect. 13.

T. luteum minimum. *Ger. Em.* 1186. f. *Lob. Ic. v.* 2. 29. f.

In dry gravelly fields and pastures, with the last.

Annual. *June, July.*

Root small, its fibres often furnished with little knobs. *Stems* numerous, procumbent, scarcely branched, round, a little hairy, usually from 3 to 9 inches long; but in the larger variety, *Engl. Bot. f.* 1, extending to 2 feet, and stouter, more brittle and succulent. *Common footstalks* generally very short, except those near the root, while the *partial-stalk* of each central leaflet is much more considerable than in the preceding or following species. *Leaflets* inversely heart-shaped, striated, toothed, smooth; the lateral ones almost sessile. *Stipulas* half-ovate, veiny, acute. *Flower-stalks* axillary, straight, firm and rigid, longer than the leaves. *Fl.* from 12 to 15 in each little hemispherical head, almost perfectly sessile, yellow; at length becoming brown and deflexed. *Calyx-teeth* very unequal, hairy towards the points. *Standard* obscurely, if at all, furrowed, narrower than in *T. procumbens*. *Legume* obovate, as long as the faded *corolla*, which it fills. *Seed* 1, rarely 2.

18. *T. filiforme*. Slender Yellow Trefoil.

Clusters lax, of few flowers. Common-stalks capillary, wavy. Standard even. Stems prostrate. Leaflets all nearly sessile.

T. filiforme. Linn. *Sp. Pl.* 1088. Willd. v. 3. 1384. Fl. Br. 1404; also 792, excluding the variety. Comp. ed. 4. 124. Engl. Bot. v. 18. t. 1257. Relh. 290. Hook. Scot. 220.

T. lupulinum minimum. Dill. in Raii Syn. 331. t. 14. f. 4.

T. luteum lupulinum minimum. Moris. v. 2. 142; not the figure.

In sandy or gravelly grassy pastures, whether dry or moist.

Annual. June, July.

Root tapering, small, the fibres bearing several fleshy tubercles.

Whole herb usually much smaller than the foregoing, quite smooth, except a slight hairiness on the *flower-stalks*, and sometimes on the upper part of the *stems*, which latter are quite prostrate, very slender, 3 or 4 inches long, sometimes 10 or 12, much branched at the bottom. *Leaflets* small, inversely heart-shaped, toothed. *Common footstalks* very short, scarcely a quarter so long as the leaflets; *partial ones* still shorter, all nearly equal and uniform, that of the middle leaflet not being, as in the last species, an apparent continuation or elongation of the common stalk. *Stipulas* small, ovate, membranous, somewhat fringed. *Fl.* very small, yellow, in real *clusters*, each having a capillary partial stalk, full as long as the *calyx-tube*; they are usually from 3 to 5 in each cluster; sometimes only 2, or even solitary; sometimes 7 or 8; leaning all one way, finally pendulous. Teeth of the *calyx* rather less unequal than in *T. minus*, quite smooth, for I believe the hairs represented in *Engl. Bot.* are an error. *Legume* obovate, scarcely covered by the withered *corolla*, which turns pale in that state, and the standard is perfectly even. *Seed* large, almost always solitary, I have very rarely seen 2.

This species is clearly and most scientifically distinguished from the last by its *inflorescence*, which Linnæus, in *Phil. Bot. sect.* 279, prefers to every other part for sound specific differences. He has adverted to the “manifest and distinct” partial flower-stalks of *T. filiforme* in his *Sp. Pl.*, which in fact render the inflorescence of this plant a *racemus*, not, as in the foregoing, a *spica* or *capitulum*. Haller in his *Iter Helveticum*, *sect.* 13, highly extols Dillenius for ascertaining these two species; and yet in his *Historia*, under n. 364, he records that Dillenius found the seeds of *T. filiforme* produced n. 363, our *procumbens*. This proves too much, and oversets all the authority of the relator. Yet the great Oxford Professor is the first who clearly discriminated the three species which form our 5th section, and his figures of the two latter preclude all doubt as to what he meant. Linnæus seems to have considered our *minus* as a variety of *procumbens*; his pupil Ehrhart referred it to *filiforme*. I have, too heedlessly, been led into the latter error in the second volume of *Fl. Br.*; but the accurate inquiries of the Rev. Dr. Beeke, now Dean of Bristol, enabled me to correct my mistake, in the third volume. This gentleman favoured me with specimens of the plants in

question from the same “very dry flinty gravelly natural pasture,” at Ufton, near Reading, where the larger variety of the *minus*, with its succulent brittle stem, retained all its diversity of habit, and remained constant when propagated by seed. Still there is no positive specific character. Cattle and sheep are so fond of this variety, that it can scarcely be gathered in any pastures to which they have access. I have not heard the result of the experiments made upon it for cultivation.

367. LOTUS. Bird’s-foot-trefoil.

Linn. Gen. 388. *Juss.* 356. *Fl. Br.* 793. *Tourn. t.* 227. *Lam. t.* 611. *Gærtn. t.* 153.

Cal. tubular, with 5 direct, acute, nearly equal teeth, permanent, unchanged. *Cor.* of 5 petals, deciduous; standard obovate, ascending, with a broad vaulted claw; wings oblong, obtuse, shorter than the standard, converging at their upper edges; keel of 2 united petals, protuberant underneath, closed above, with an ascending point, and narrow, short, distinct claws. *Filam.* 10; 9 in one split compressed, horizontal tube, the separate portion of each erect, a little dilated towards the top; the tenth capillary, distinct. *Anth.* small, roundish. *Germ.* cylindrical, rather compressed. *Style* ascending at a right angle, thread-shaped. *Stigma* simple. *Legume* cylindrical, straight, simple or winged, much longer than the calyx, of 2 valves, and 1 cell, separated, by more or less of a spongy substance, into several, spurious or incomplete, cells, each lodging a globular, or somewhat cylindrical, *seed*.

Annual or perennial herbs, rarely shrubby. *Leaves* ternate, with a pair of large leafy *stipulas*, and thence by some termed quinate. *Fl.* solitary or capitate, on long axillary stalks. *Cor.* yellow, often mixed with red, or crimson, or almost black; rarely whitish.

1. *L. corniculatus*. Common Bird’s-foot-trefoil.

Heads depressed, of few flowers. Stems recumbent, pithy. Legumes spreading, nearly cylindrical. Claw of the standard obovate. Filaments all dilated.

L. corniculatus. *Linn. Sp. Pl.* 1092. *Willd. v.* 3. 1395. *Fl. Br.* 793. *Engl. Bot. v.* 30. *t.* 2090. *Curt. Lond. fasc.* 2. *t.* 56. *Mart. Rust. t.* 53. *Hook. Scot.* 220; *excluding the variety.* *Fl. Dan. t.* 991. *Ehrh. Herb.* 428.

L. n. 385 β . *Hall. Hist. v.* 1. 167.

L. corniculata glabra minor. *Raii Syn.* 334. *Bauh. Hist.* v. 2. 354. f. 355.

L. sativa. *Dalech. Hist.* 507.

Trifolium siliquosum minus. *Ger. Em.* 1190. f.

T. corniculatum primum. *Dod. Pempt.* 573. f.

Melilotus germanica. *Fuchs. Hist.* 527. f.

M. nobilis. *Trag. Hist.* 594. f.

Meliloti tertium genus. *Fuchs. Ic.* 299. f.

β. *Lotus corniculata minor, foliis subtùs incanis.* *Dill. in Raii Syn.* 334.

L. corniculatus ε. *Fl. Br.* 794.

In open grassy pastures, common.

Perennial. *June—September.*

Root branching, somewhat woody; the fibres beset with small granulations. *Stems* several, spreading on the ground in every direction, varying in length from 3 to 10 inches, simple or branched, solid, filled with pith, angular, leafy, sometimes quite smooth, but for the most part clothed, like the glaucous backs of the *leaves*, with close-pressed hairs. *Leaflets* obovate, acute, entire, on short partial stalks; the lateral ones oblique, or inequilateral. *Common footstalk* channelled, about the length of the leaflets, having at its base a pair of ovate *stipulas*, resembling them, but rather smaller. *Flower-stalks* axillary, solitary, erect or recumbent, angular, 5 times as long as the leaves, each bearing from 2 or 3 to 5 bright yellow *flowers*, dark green when dried, in a flat *head* or *umbel*, accompanied by a small ternate leaf. They change to orange in verging towards decay. The *standard* (not *keel*, as by a slip of the pen in *Engl. Bot.*) striped with red at the base in front; its claw much dilated and vaulted. *Keel* pale yellow. *Filaments* in their separate part all dilated under the *anthers*. Interstices of the *calyx-teeth* rounded. *Legume* smooth, of a shining purplish brown, a little depressed and channelled along the upper side.

Recommended for cultivation, though under the erroneous names of Milk-vetch and *Astragalus glycyphyllos*, by the late worthy Dr. Anderson, in his *Agricultural Essays*, as being excellent for fodder, as well as for hay.

2. *L. major.* Greater Bird's-foot-trefoil.

Heads depressed, many-flowered. Stems erect, tubular. Legumes drooping, cylindrical. Claw of the standard linear. Shorter filaments not dilated.

L. major. *Scop. Carn.* v. 2. 86. *Comp. ed.* 4. 124. *Engl. Bot.* v. 30. t. 2091. *Purt.* v. 1. 342. *Forst. Tonbr.* 86. *Grev. Edin.* 163.

L. corniculatus γ. *Fl. Br.* 794.

L. corniculatus β. *Hook. Scot.* 220.

L. n. 385 α. *Hall. Hist.* v. 1. 167.

314 DIADELPHIA—DECANDRIA. Lotus.

Loti corniculatæ major species. *Raii Syn.* 334. *Bauh. Hist.* v. 2. 355. f. 356.

Lotus. *Riv. Tetrap. Irr.* t. 76. f. 1.

β. *L. pentaphyllos medius pilosus.* *Dill. in Raii Syn.* 334.

L. corniculatus δ. *Fl. Br.* 794.

In wet bushy places, osierholts, and hedges.

Perennial. *July, August.*

Very different from the foregoing species in general habit, and now technically distinguished by several clear and sufficient characters, for most of which I am indebted to the worthy Dean of Bristol. Every botanist had been struck with the aspect of the plant, and Scopoli long ago proposed it as a species, but without a sufficient specific definition, except that of the shorter separate *filaments* not being, like the longer ones, dilated under their *anthers*. The *stems* are from 1 to 2 or 3 feet high, upright, clothed, more or less, with long loosely-spreading hairs, rarely quite smooth; internally hollow, or tubular, with little or no pith in any part, which I take to be an important character. *Leaves* fringed or clothed with similar hairs. *Fl.* from 6 to 12 in each head, of a duller orange than the former. *Calyx-teeth* stellated in an early state; their interstices, when fully expanded, acutangular, not rounded. *Claw* of the *standard* almost linear, though vaulted. *Legumes* not horizontal, but drooping, slender and exactly cylindrical.

Whether there may be any difference in the agricultural qualities of these plants, and whether the present might be capable of cultivation in very wet meadows, nobody has hitherto inquired.

3. *L. decumbens.* Spreading Bird's-foot-trefoil.

Heads of few flowers. Stems recumbent, nearly solid. Legumes somewhat spreading, cylindrical, two-edged. Calyx hairy; its teeth shorter than the tube.

L. decumbens. *Forst. Tonbr.* 86.

In fields and meadows.

At Hastings, Sussex, near Bulverhithe; also in meadows near Tonbridge. *Forster.* In fields near Forfar, North Britain. *Mr. G. Don.*

Perennial. *July.*

Stems widely spreading, partly quite prostrate, a foot or more in length, branched, filled with light pith, angular, leafy, smooth, somewhat glaucous. *Leaves* glaucous, smooth above; occasionally clothed beneath with short, close, bristly hairs. *Leaflets* and *stipulas* similar, lanceolate, pointed, oblique, except the terminal one, which is obovate-lanceolate. *Common footstalk* but half the length of the leaflets, channelled, slightly bordered. *Flower-stalks* axillary, 4 or 5 times the length of the leaves,

smooth, stout and firm, obscurely angular, each bearing an *umbel* of from 3 to 6 bright yellow *flowers*, accompanied by a ternate leaf without stipulas. In starved plants the *flowers* are solitary. *Partial stalks* and *calyx* all over silky, with more or less abundant, short, close hairs; the *calyx-teeth* lanceolate, tapering, spreading, shorter than the tube, somewhat hairy, with wide rounded interstices. Separate portion of each *filament* of considerable length, the longest dilated upwards. *Legumes* nearly erect, or but slightly spreading, smooth, dotted, cylindrical, without any depression or channel, both sutures rather prominent, forming a ridge along each margin.

I can find no account of any thing approaching this species except *L. pedunculatus*, Cavan. *Ic. t.* 164, the plate and description of which are not very discriminative, but its *stem* is said to be erect, 3 feet high, and every part of the plant is perfectly smooth. *L. decumbens* grows in Switzerland and the Levant, as well as on the sandy shores of Sicily. Most botanists have supposed it a variety of the *corniculatus*; Linnæus and Solander confounded it with the following.

4. *L. angustissimus*. Slender Bird's-foot-trefoil.

Flowers solitary, or in pairs. Stems much branched, prostrate, tubular. Legumes two-edged, very slender, somewhat compressed. Calyx loosely hairy; teeth fringed, twice the length of the tube.

L. angustissimus. Linn. *Sp. Pl.* 1090. Willd. *v.* 3. 1389. Marsch. *Taur.-Cauc.* *v.* 2. 220; *from the author*.

L. diffusus. Fl. Br. 794. Engl. Bot. *v.* 13. *t.* 925. Comp. ed. 4. 124. Willd. *v.* 3. 1389.

L. corniculata, *siliquis singularibus, vel binis, tenuis*. Bauh. *Hist.* *v.* 2. 356. *f*; *good*.

L. annua oligoceros, *siliquis singularibus binis ternisve*. Moris. *v.* 2. 175. *sect.* 2. *t.* 18. *f.* 1.

L. pentaphyllos minor hirsutus, *siliquâ angustissimâ*. Bauh. *Pin.* 332.

Trifolium corniculatum minus, pilosum. Bauh. *Prodr.* 144; *with an excellent description*.

In meadows towards the sea, on the south and western coasts of England.

On the rocky beach at Hastings, Sussex. Mr. Dickson. At Kingsteignton and Bishopsteignton, Devonshire. Dean of Bristol. In a meadow near St. Vincent's rocks, Bristol, plentifully. Mr. D. Turner and Mr. Sowerby.

Annual. May, June.

Smaller in general than any of the foregoing, its pubescence consisting of fine, long, loose, and spreading hairs, like those of *L. major*, but far more constant and abundant. Root branched, fibrous, beset with small tubercles, certainly annual, not peren-

nial. *Stems* procumbent, or partly ascending, roundish, branched, densely leafy, very hairy, from 6 to 10 inches long, with a small internal cavity destitute of pith. *Leaflets* and *stipulas* ovate, pointed, rather glaucous, hairy on both sides. *Flower-stalks* spreading, weak and slender, once or twice as long as the leaves, hairy, each bearing for the most part two, rather small, bright yellow, *flowers*, sometimes but one, very rarely three, with a ternate leaf at the base of their *partial stalks*. *Cal.* widely funnel-shaped; its teeth linear, narrow, green, twice as long as the tube, copiously fringed with long spreading hairs, totally unlike the calyx of the last species. *Filam.* all rather dilated upward. *Legumes* spreading, cylindrical, or slightly compressed, with prominent sutures, smooth, of a shining brown, very slender, often transversely undulated, from the projection of their numerous orbicular *seeds*.

A Montpellier specimen of this plant from Sauvages, bearing the synonym of *C. Bauhin*, is the original authority for *L. angustissimus*. To this Linnæus had pinned a nearly smooth one of the last species, which Solander in the Banksian herbarium has taken for the true *angustissimus*, calling our present plant *L. diffusus*, and this great authority misled me. A scrutiny of the Linnæan specimens, and their marks, with the descriptions, synonyms, and history of *L. angustissimus*, have satisfied me that this is our *diffusus*; and it is never too late to correct a manifest error, especially as the original name is much the best.

368. *MEDICAGO*. *Medick*.

Linn. Gen. 389. *Juss.* 356. *Fl. Br.* 795. *Sm. in Rees's Cycl.* v. 23.
Tourn. t. 231. *Lam. t.* 612. *Gærtn. t.* 155.

Medica. Tourn. t. 231.

Cal. tubular, with 5 direct, acute, nearly equal teeth, permanent, unchanged. *Cor.* of 5 petals, deciduous; standard ovate, ascending, undivided, with a short broad claw; wings obovate, cohering by their lower edges; keel of 2 combined petals with separate claws, oblong, obtuse, depressed by the swelling germen, and finally spreading widely from the standard. *Filam.* 10; 9 united almost to their summits into one split compressed tube; the tenth capillary, distinct. *Anth.* small, roundish. *Germ.* stalked, oblong, compressed, incurved or spiral, enfolded by the filaments, starting elastically from the keel, and forcing back the standard, terminating in a short awl-shaped, straight, ascending *style*. *Stigma* terminal, minute, simple. *Legume* compressed, inflexed, falcate, or spiral with numerous convolutions, of 1 cell and 2 valves. *Seeds* several, often numerous, kidney-shaped, smooth.

A numerous genus of herbaceous, rarely a little shrubby, mostly procumbent, plants, with stalked, ternate *leaves*; *stipulas* unlike the leaflets; and small, clustered, or spiked, axillary, yellow, rarely blueish, *flowers*. *Legumes* various, very peculiar, smooth or prickly, often remarkably convoluted.

*1. *M. sativa.* Purple Medick, or Lucerne.

Clusters upright. Legumes spiral. Stem erect, smooth.

M. sativa. *Linn. Sp. Pl.* 1096. *Willd. v. 3.* 1404. *Fl. Br.* 795.

Engl. Bot. v. 25. t. 1749. Mart. Rust. t. 48. Hook. Scot. 220.

Medica. Dod. Pempt. 576. f.

M. n. 382. Hall. Hist. v. 1. 166.

M. sativa. Dalech. Hist. 502. f.

M. sativa, sive Trifolium sativum, siliquâ cornutâ, magis tortili.

Moris. v. 2. 158. sect. 2. t. 16. f. 2.

M. legitima. Clus. Hist. v. 2. 242. f.

M. major erectior, floribus purpurascentibus. Bauh. Hist. v. 2. 382. f. 383.

Trifolium Burgundiacum. Ger. Em. 1189. f.

Fœnum Burgundiacum. Lob. Ic. v. 2. 36. f.

In hedges, pastures, and the borders of fields, in dry calcareous soils, but scarcely a native.

Perennial. *June, July.*

Root woody, seldom lasting long. *Stems* erect, or somewhat reclining, about 2 feet high, branched, leafy, roundish, smooth.

Leaflets oblong, inclining to wedge-shaped, more or less acute, sharply serrated towards the end, clothed with close silky hairs on both sides, but especially beneath. *Stipulas* lanceolate, or half-arrow-shaped, pointed, sometimes toothed. *Clusters* erect, of many blueish-purple *flowers*, with a small bristle-like *bractea* under each partial stalk. *Legume* spiral, with rarely more than 2 or 3 turns, silky while young. *Seeds* several, flattish.

Lucerne has often been recommended for fodder or for hay; its qualities and mode of culture may be seen in the *Flora Rustica*. Gerarde mentions it as increasing much in his garden. I have often suspected it to be a variety of the following, originating from cultivation, but they do not appear ever to run into each other.

2. *M. falcata.* Yellow Sickle Medick.

Clusters upright. Legumes sickle-shaped. Stem procumbent.

M. falcata. Linn. Sp. Pl. 1096. *Willd. v. 3.* 1405. *Fl. Br.* 796.

Engl. Bot. v. 15. t. 1016. Mart. Rust. t. 86 and 87. Fl. Dan. t. 233.

Medica n. 381. Hall. Hist. v. 1. 165.

318 DIADELPHIA—DECANDRIA. *Medicago*.

M. sylvestris. *Raii Syn.* 333. *Bauh. Hist.* v. 2. 383. *f.*

M. sylvestris frutescens, &c. *Moris.* v. 2. 157. *sect.* 2. *t.* 16. *f.* 1.

M. flavo flore. *Clus. Hist.* v. 2. 243. *f.*

M. flore luteo. *Clus. Pann.* 759. *f.*

Falcata. *Riv. Tetrap. Irr.* t. 84.

Trifolium luteum, *siliquâ cornutâ*. *Ger. Em.* 1191. *f.*

On dry gravelly banks and old walls.

Between Watford and Bushy-hill, by the foot-way. *Doody*. In Cambridgeshire. *Relhan*. Common about Norwich, in dry gravelly fields, and on many parts of the city walls; also about Bury St. Edmund's. [Near Ramsgate. *Mr. G. E. Smith*.]

Perennial. *June, July*.

Root long and woody. *Habit* like the preceding, but the numerous *stems* are procumbent, spreading every way, hairy. *Leaves* and *stipulas* much like *M. sativa*. The *clusters* are usually shorter and more dense, but this varies according to exposure or luxuriance. *Fl.* generally pale yellow, but occasionally violet, and more frequently green, evidently from a combination of these two colours. *Legumes* black, downy, sickle-shaped, not twisted into a screw, as in the *sativa*. *Seeds* from 4 to 8, kidney-shaped, yellowish. The growing *germen* liberates itself with a spring from the *keel*, by which the *pollen* is dashed about the *stigma* by the time the rudiments of the *seeds* are perfected.

This species is perhaps as good fodder as Lucerne, though less succulent, and from its position less accessible to the scythe.

3. *M. lupulina*. Black Medick, or Nonesuch.

Spikes ovate, erect. Legumes kidney-shaped, rugged and veiny, single-seeded. Stem procumbent.

M. lupulina. *Linn. Sp. Pl.* 1097. *Willd.* v. 3. 1406. *Fl. Br.* 796. *Engl. Bot.* v. 14. *t.* 971. *Curt. Lond. fasc.* 2. *t.* 57. *Mart. Rust.* t. 19. *Sincl. ed.* 2. 323. *Hook. Scot.* 220. *Fl. Dan.* t. 992.

Medica n. 380. *Hall. Hist.* v. 1. 165.

Melilotus minima. *Riv. Tetrap. Irr.* t. 8.

M. lutea minima hirsuta procumbens, *spicâ breviorè densissimè dispositâ*, *seminis pericarpio renali nigro*. *Moris.* v. 2. 162. *sect.* 2. *t.* 16. *f.* 8.

M. minor. *Trag. Hist.* 593. *f.*

Trifolium luteum lupulinum. *Raii Syn.* 331. *Ger. Em.* 1186. *f.*

T. pratense luteum. *Fuchs. Hist.* 819. *f.* *Ic.* 473. *f.* *Bauh. Hist.* v. 2. 380. *f.* *Dalech. Hist.* 1355. *f.*

T. agrarium. *Dod. Pempt.* 576. *f.*

β. *Fl. Br.* 797.

Medica polycarpus, *fructu minore compresso scabro*. *Raii Syn.* 333.

In meadows, pastures, and cultivated fields, very common.

β. Among corn in Peckham fields, plentifully. *Doody*. Near Paddington, and behind Pindar's-end, near Enfield. *Dillenius*.

Annual. *May—August*.

This has the habit of some of the procumbent yellow Trefoils. The root is tapering and fibrous. Stems angular, downy, leafy, various in length, spreading widely on the ground, not branched, except at the bottom. Leaflets roundish-obovate, or rhomboid, veiny, smoothish, unspotted, serrated at the anterior margin. Stipulas lanceolate, toothed. Spikes dense, ovate, erect, on long axillary stalks, each of numerous yellow flowers. Legumes kidney-shaped, with many branching prominent veins, and traces of a spiral structure; finally black, sometimes slightly downy. Seed kidney-shaped, solitary.

One of the most valuable of artificial grasses, affording excellent fodder for sheep.

β has not been well ascertained. The references in Ray's *Synopsis* are in several respects erroneous. By the description of "about 10 seed-vessels on each stalk" it appears to be akin to this species, and not to any of the distinctly spiral, many-seeded kinds, which never bear half that number of legumes.

4. *M. maculata*. Spotted Medick.

Stalks two- or three-flowered. Leaflets inversely heart-shaped, spotted. Stipulas dilated, sharply toothed. Legumes spiral, depressed, fringed with long spreading bristles.

M. maculata. Sibth. 232. Willd. *Sp. Pl.* v. 3. 1412. Sm. in Rees's *Cycl.* n. 22. Comp. ed. 4. 125. Hull. 219.

M. polymorpha. Linn. *Sp. Pl.* 1098 γ. Fl. Br. 797 α. Engl. Bot. v. 23. t. 1616. Curt. Lond. fasc. 3. t. 47. Mart. Rust. t. 76.

M. arabica. With. 660. Sym. 167.

M. hispida. Gærtn. v. 2. 349. t. 155. f.

Medica arabica. Camer. Hort. 97. t. 27.

M. cochleata minor polycarpus annua, capsulâ majore albâ, folio cordato maculâ fuscâ notato. Moris. v. 2. 154. sect. 2. t. 15. f. 17.

Trifolium cochleatum, folio cordato maculato. Raii Syn. 333. Bauh. Pin. 329.

T. cordatum. Ger. Em. 1190. f.

Cochleata fructu longiùs echinato. Riv. Tetrap. Irr. t. 88. f. 12.

β. *Medica marina supina nostras*, foliis viridibus, ad summos ramulos villosis. Pluk. Almag. 245. Dill. in Raii Syn. 334.

M. folliculo spinoso. Lob. Ic. v. 2. 37. f.

On a gravelly soil in the southern parts of England.

Annual. *May, June*.

Root fibrous, beset with little fleshy knobs. Stems prostrate, various in length, leafy, angular, branched and spreading; sometimes downy towards the extremity. Leaves on long footstalks; leaflets inversely heart-shaped, equal, sharply, but not deeply toothed, either nearly smooth, or somewhat silky, each marked

in the centre, especially the earlier ones, with an irregular blackish spot; the middle one on a rather longer partial stalk than the rest. *Stipulas* half-ovate, with several deep pointed teeth. *Fl.* yellow, rather small, 2 or three together, in cultivated specimens 4 or 5 on each axillary stalk, shorter than the leaves. *Legumes* orbicular, depressed, smaller than a pea, with several spiral turns, marked with concentric ribs, the margin fringed with two rows of long, spreading, slender, weak, partly hooked, bristles, the whole, when ripe, brown, not black. *Seeds* several, kidney-shaped.

This has been mentioned, but not much recommended, as a fodder for cattle.

I have specimens gathered by the Rev. Mr. Bryant at Cley, Norfolk, which may possibly be the variety β . They agree exactly with the figure of Lobel above cited, but Dillenius in his blind account of this plant, taken from Plukenet, does not advert to that figure. The spines of the *legumes* are shorter and more rigid than in our common *M. maculata*, and the *leaflets* are without spots. I had suspected this might be *M. denticulata*, Willd. v. 3. 1414, *Rees's Cycl.* n. 26, but the *legumes* have sometimes 3 or 4 convolutions, and the *leaflets* are not obovate. It seems a variety of the *maculata*, and may or may not be the plant of Plukenet or Dillenius.

5. *M. muricata*. Flat-toothed Medick.

Stalks barely three-flowered. *Stipulas* deeply toothed, hairy as well as the obovate, somewhat rhomboid, leaflets. *Legumes* even, with short, depressed, radiating teeth, in a single row.

M. muricata. Willd. *Sp. Pl.* v. 3. 1414. Sm. in *Rees's Cycl.* n. 27. *Comp. ed.* 4. 125. *With.* 661. *Hull* 219.

M. polymorpha muricata. Linn. *Sp. Pl.* 1098 ζ . *Fl. Br.* 798 γ .

M. minor, orbiculato compresso fructu, circum oras spinis molliusculis echinato. *Pluk. Almag.* 243.

Trifolium cochleatum, modiolis spinosis. *Raii Syn.* 333. *Pluk. Phyt. t.* 113. *f.* 6.

On the sea coast.

At Orford, Suffolk, on the sea bank plentifully. *Ray*.

Annual. *June, July*.

Stems procumbent. *Leaflets* inversely heart-shaped, or somewhat rhomboid, clothed with silky hairs. *Fl.* often solitary. I have seen no native specimens, and have doubts concerning this species, which I hope future inquiry may remove. The *legumes* of foreign specimens are more cylindrical, and less depressed, with shorter teeth, or spines, than in Plukenet's figure.

6. *M. minima*. Little Bur Medick.

Stalks many-flowered. Stipulas half-ovate, nearly entire. Leaflets obovate, hairy. Legumes orbicular, with a double row of hooked spines.

M. minima. Willd. *Sp. Pl.* v. 3. 1418. Sm. in *Rees's Cycl.* n. 35. *Comp. ed.* 4. 125. With. 660. Hull 219.

M. polymorpha minima. Linn. *Sp. Pl.* 1099 μ . *Fl. Br.* 798 β . *Fl. Dan.* t. 211.

Medica n. 383 α . Hall. *Hist.* v. 1. 166.

M. echinata minima. Raii *Syn.* 333. Bauh. *Hist.* v. 2. 386. f.

Cochleata fructu echinato minimo. Riv. *Tetrap. Irr.* t. 88. f. 14.

In sandy fields, but rare.

At Narburgh, Norfolk. Mr. Woodward. Near Newmarket. Mr. D. Turner. [Sandwich old haven, upon sandy ground. Mr. G. E. Smith.]

Annual. June, July.

A small prostrate species, clothed in every part with fine, soft, rather silky hairs. Stipulas either quite entire, or with a few shallow teeth. Leaflets obovate, or roundish, with a few teeth at the extremity only. Fl. 4, 5, or more, in each cluster, yellow, with a very hairy calyx. Legumes either hairy or smooth, globular, small, of 3 or 4 convolutions, bordered with a double row of hooked spines, spreading in opposite directions.

Class XVIII. POLYADELPHIA.

Filaments combined, in more than two sets.

Order I. POLYANDRIA. Stamens numerous.

369. HYPERICUM. *Cal.* inferior, in 5 deep divisions. *Pet.* 5. *Filam.* united at the base, into 3 or 5 parcels. *Caps.* with many seeds.



POLYADELPHIA POLYANDRIA.

369. HYPERICUM. St. John's-wort.

Linn. Gen. 392. *Juss.* 255. *Fl. Br.* 800. *DeCand. Prodr.* v. 1. 543. *Tourn. t.* 131. *Lam. t.* 643. *Gærtn. t.* 62.

Androsæmum. *Tourn. t.* 128. *Gærtn. t.* 59. *DeCand. Prodr.* v. 1. 543. Capsule pulpy.

Ascyrum. *Tourn. t.* 131; not of Linnæus.

Nat. Ord. Rotaceæ. *Linn.* 20. *Hyperica.* *Juss.* 68. *Hypericineæ.* *DeCand.* 34.

Cal. inferior, of 1 leaf, in 5 deep, nearly ovate, concave, somewhat unequal, permanent segments. *Pet.* 5, oblong-ovate, obtuse, spreading, obliquely imbricated. *Filam.* numerous, capillary, united at the base, more or less accurately, into 3 or 5 sets. *Anth.* small, roundish, tremulous. *Germ.* superior, roundish or ovate. *Styles* terminal, simple, usually 3 or 5, distant, the length of the stamens, sometimes only 1 or 2. *Stigma* simple. *Caps.* roundish, with as many cells as there are styles. *Seeds*

very numerous, generally oblong, roughish, without albumen.

Perennial *herbs* or *shrubs*. *Leaves* simple, without *stipulas*, opposite and entire, full of pellucid dots, lodging an essential oil. *Pet.* yellow, often glandular, deciduous.

1. *H. calycinum*. Large-flowered St. John's-wort.

Styles five. Flowers solitary. Stem shrubby, branched, quadrangular. Segments of the calyx obovate, obtuse, permanently spreading. Leaves oblong.

H. calycinum. *Linn. Mant.* 106. *Willd.* v. 3. 1442. *Comp. ed.* 4. 125. *Tr. of Linn. Soc.* v. 10. 266. *Engl. Bot.* v. 29. t. 2017. *Curt. Mag.* t. 146 ; *excl. Bauhin's syn.* *Hook. Scot.* 221. *DeCand. Prodr.* v. 1. 546. *Jacq. Fragm.* 10. t. 6. f. 4.

Androsæmum constantinopolitanum flore maximo. *Wheler's Journey* 205. t. 9.

A. flore et thecâ seminali quinquecapsulari omnium maximis. *Moris.* v. 2. sect. 5. t. 35. f. 2. ; *descr. erroneous.*

In bushy places in the west of Ireland and Scotland.

Three miles from Cork, in the way to Bandon, very abundantly, and undoubtedly wild. *Mr. Drummond.* Woods above Largs, on the western coast of Scotland, perfectly indigenous ; *Mr. Hopkirk. Hooker.*

Shrub. *July—September.*

Root creeping. *Stems* shrubby, erect, 12 or 18 inches high, with simple leafy square *branches*, smooth like every other part. *Leaves* ovate-oblong, varying in bluntness, coriaceous, evergreen, about 2 inches long, on very short stalks. *Fl.* 2 or 3 inches wide, of a bright golden yellow, with innumerable, reddish, tremulous *anthers*. *Pet.* often lobed at one side. *Styles* sometimes but 4.

A great ornament to shrubberies and parks, excellent as a shelter for game, and bearing any cold of our climate.

2. *H. Androsæmum*. Tutsan, or Park leaves.

Styles three. Capsule pulpy. Stem shrubby, compressed.

H. Androsæmum. *Linn. Sp. Pl.* 1102. *Willd.* v. 3. 1446. *Fl. Br.* 800. *Engl. Bot.* v. 18. t. 1225. *Curt. Lond. fasc.* 3. t. 43. *Hook. Scot.* 221.

H. maximum, Androsæmum vulgare dictum. *Raii Syn.* 343.

Androsæmum. *Dod. Pempt.* 78. f. *Dalech. Hist.* 1156. f. 2.

A. maximum, quasi frutescens, bacciferum. *Moris.* v. 2. 472. sect. 5. t. 6. f. 12.

A. maximum frutescens. *Bauh. Pin.* 280.

A. officinale. *Allion. Ped.* v. 2. 47. *DeCand. Prodr.* v. 1. 543.

Clymenon Italorum. *Ger. Em.* 543. f. *Lob. Ic.* 632. f.

324POLYADELPHIA—POLYANDRIA.Hypericum.

Tutsan, or Park leaves. *Petiv. H. Brit. t. 60. f. 9.*

In moist shady lanes, thickets and woods, not very general.

About North Walsham, Norfolk. *Rev. Mr. Hepworth.* At Field Dalling, Norfolk, and very plentifully at Asheridge, Herts. *Mr. Woodward.* Not uncommon in woods in Ireland. *Rev. Mr. Butt.* In the western part of Scotland chiefly. *Hooker.*

Shrub. *July, August.*

Rather taller and more branched than the preceding, its *branches* quadrangular, more or less compressed. *Leaves* ovate, or somewhat heart-shaped, sessile, widely spreading. *Panicles* terminal, erect, forked, many-flowered, with angular or winged smooth *stalks.* *Fl.* an inch wide, yellow, with 3 sets of *stamens*, and as many *styles.* *Caps.* finally pulpy, purplish-black, imperfectly 3-celled, as are many of the dry capsules of other species.

The *leaves* and other parts have an aromatic scent when rubbed. This species is said not to have been found out of Britain and Ireland, except in Italy and the South of France; but Dr. Sibthorp gathered it in Greece.

3. *H. quadrangulum.* Square St. John's-wort. St. Peter's-wort.

Styles three. Stem herbaceous, with four sharp angles. *Leaves* with copious pellucid dots. *Segments* of the *calyx* lanceolate.

Hypericum quadrangulum. *Linn. Sp. Pl. 1104. Willd. v. 3. 1459. Fl. Br. 801. Engl. Bot. v. 6. t. 370. Curt. Lond. fasc. 4. t. 52. Hook. Scot. 221. DeCand. Prodr. v. 1. 548. Fl. Dan. t. 640.*

H. n. 1038. Hall. Hist. v. 2. 5.

H. Ascyron dictum, caule quadrangulo. Raii Syn. 344.

H. in dumetis nascens. Trag. Hist. 73. f. 1.

Androsæmum Ascyrum dictum, caule quadrangulo glabro. Moris. v. 2. 471. sect. 5. t. 6. f. 10.

St. Peter's-wort. *Petiv. H. Brit. t. 60. f. 11; calyx bad.*

Common in moist meadows and thickets, and about the banks of rivers.

Perennial. *July, August.*

Root somewhat woody, creeping. *Herb* smooth, light green. *Stems* several, from 1 to 2 feet high, erect, leafy, acutely quadrangular with convex interstices, beset from top to bottom with short, opposite, axillary, leafy branches. *Leaves* crossing each other in pairs, sessile, elliptical, or ovate, obtuse, many-ribbed, veiny, full of minute, colourless, pellucid dots, and bordered with a more or less perfect row of dark-coloured ones, yielding a blood-red liquor. The uppermost branches form a leafy dense *panicle*, of numerous lemon-coloured *flowers*, about half the size of the last. *Segments* of the *calyx* lanceolate, narrow, acute, ribbed, entire, without marginal glands. *Pet.* oblique, sometimes dotted

and streaked with dark purple, but not so much as in the next.
Anth. each tipped with a dark purple gland. *Styles* short, erect.
Caps. oval.

The whole plant, when bruised, has a light aromatic lemon-like odour.

Petiver's figure is copied from the wooden cuts which really represent *H. hirsutum*, though generally quoted for this.

4. *H. perforatum*. Common Perforated St. John's-wort.

Styles three. Stem two-edged. Leaves obtuse, with copious pellucid dots. Segments of the calyx lanceolate.

H. perforatum. Linn. *Sp. Pl.* 1105. Willd. v. 3. 1460. *Fl. Br.* 801. *Engl. Bot.* v. 5. t. 295. *Curt. Lond. fasc.* 1. t. 57. *Woodv. t.* 10. *Hook. Scot.* 221. *DeCand. Prodr.* v. 1. 549. *Fl. Dan. t.* 1043.

H. n. 1037. *Hall. Hist.* v. 2. 4.

Hypericum. *Raii Syn.* 342. *Ger. Em.* 539. f. *Lob. Ic.* 398. f. *Fuchs. Hist.* 831. f. *Matth. Valgr.* v. 2. 286. f. *Camer. Epit.* 675. f. *Dod. Pempt.* 76. f. *Dalech. Hist.* 1153. f. *Lonic. Kreuterb.* 158. f. 1.

H. vulgare. *Bauh. Pin.* 279. *Moris. v.* 2. 469. *sect.* 5. t. 6. f. 1. *Trag. Hist.* 73. f.

Herba perforata. *Trag. Hist.* 72. f.

Common St. John's-wort. *Petiv. H. Brit. t.* 60. f. 5.

In groves, thickets, and edges, abundantly.

Perennial. *July, August.*

Root woody, tufted, somewhat creeping. *Stem* taller than the last, and much more bushy, in consequence of the much greater length of its axillary leafy branches; its form round, with only 2 opposite ribs or angles, not so acute as those of *H. quadrangulum*. The whole herb is moreover of a darker green, with a more powerful scent when rubbed, staining the fingers with dark purple, from the greater abundance of coloured essential oil, lodged in the herbage and even in the petals. *Leaves* very numerous, smaller than the last, elliptical or ovate, obtuse, various in width. *Fl.* bright yellow, dotted and streaked with black, or dark purple, numerous, in dense, forked, terminal panicles. *Cal.* narrow. *Styles* short, erect. *Caps.* large, ovate.

As this plant was found to bleed at the slightest touch, it was supposed to have a vulnerary quality, and became the "balm of the warrior's wound," giving a blood-red colour to every composition, whether of a spiritous or oily nature, into which it entered. The essential oil, the seat of this colour, is aromatic, and possibly tonic or stimulating, without much acrimony.

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5. *H. dubium*. Imperforate St. John's-wort.

Styles three. Stem obscurely quadrangular. Leaves obtuse, nearly destitute of pellucid dots. Segments of the calyx elliptical.

H. dubium. *Leers* 165. *Willd. Sp. Pl.* v. 3. 1460. *Fl. Br.* 802. *Engl. Bot.* v. 5. t. 296. *With.* 664. *Abbot* 167. *Hook. Scot.* 221. *Ehrh. Herb.* 150.

H. delphinense. *Villars Dauph.* v. 3. 497. t. 44; *from the author*.

H. maculatum. *Crantz Austr. fasc.* 2. 64. *Allion. Pedem.* v. 2. 45. t. 83. f. 1.

H. quadrangulum β . *DeCand. Prodr.* v. 1. 548.

In rather mountainous groves and thickets.

About Sapey, near Clifton, Worcestershire. *Dr. John Seward*. Luton, Bedfordshire. *Mr. Vaux*. North Mimms, Herts. *Mr. Sabine*. At Downton castle, near Ludlow, and Hafod, Cardiganshire, very abundantly.

Perennial. *July, August*.

Habit like the last, with long, leafy, lateral branches, but the leaves are larger, paler beneath, with few or no colourless pellucid dots, though there is commonly a broken row of dark-coloured ones close to the margin. Young radical shoots bright red. Stem quadrangular in the upper part, but not winged or bordered. *Fl.* bright yellow, in large, forked, leafy, terminal panicles. Segments of the calyx elliptical and obtuse, broader than in either of the foregoing, by which this species is essentially distinguished from them both. The petals and calyx are dotted and blotched with dark purple.

6. *H. humifusum*. Trailing St. John's-wort.

Styles three. Flowers somewhat cymose. Stem compressed, prostrate. Leaves elliptical, smooth. Segments of the calyx ovate, leafy.

H. humifusum. *Linn. Sp. Pl.* 1105. *Willd.* v. 3. 1461. *Fl. Br.* 802. *Engl. Bot.* v. 18. t. 1226. *Curt. Lond. fasc.* 3. t. 50. *Hook. Scot.* 222. *DeCand. Prodr.* v. 1. 549. *Fl. Dan.* t. 141. *Ehrh. Herb.* 117.

H. n. 1039. *Hall. Hist.* v. 2. 5.

H. minus supinum. *Raii Syn.* 343.

H. minus. *Dod. Pempt.* 76. f. *Moris.* v. 2. 469. sect. 5. t. 6. f. 3.

H. minimum supinum. *Bauh. Hist.* v. 3. 386. f. *Lob. Ic.* 400. f.

H. exiguum. *Trag. Hist.* 72. f.

H. supinum glabrum. *Ger. Em.* 541. f.

H. supinum tertium minimum. *Clus. Hist.* v. 2. 181. f.

H. humistratum. *Dalech. Hist.* 1154; f. *bad*.

Ground St. John's-wort. *Petiv. H. Brit.* t. 60. f. 8.

In sandy or gravelly, heathy, rather boggy, pastures, frequent.

Perennial. *July*.

A pretty little procumbent smooth species, with the lemon-like scent of *H. dubium* and *perforatum*. Root fibrous. Stems variously branched, compressed, or two-edged, slender. Leaves elliptical, obtuse, pliant, various in breadth, their margin dotted with black. Fl. few, bright yellow, somewhat corymbose. Cal. remarkably leafy and large, dotted at the edges, sometimes furnished, like the petals, with marginal glands. Caps. red in ripening, a colour which the leaves assume in decay.

7. *H. montanum*. Mountain St. John's-wort.

Styles three. Calyx with dense, prominent, glandular serratures. Stem erect, round, smooth. Leaves ovate, naked, clasping the stem.

H. montanum. Linn. *Sp. Pl.* 1105. Willd. *v.* 3. 1463. Fl. Br. 803. Engl. Bot. *v.* 6. t. 371. Hook. Scot. 222. Dicks. *H. Sicc. fasc.* 18. 19. DeCand. *Prodr.* *v.* 1. 552. Fl. Dan. *t.* 173.

H. n. 1042. Hall. *Hist.* *v.* 2. 6.

H. elegantissimum non ramosum, folio lato. Raii *Syn.* 343. Bauh. *Hist.* *v.* 3. p. 2. 383. f.

Androsæmum. Matth. *Valgr.* *v.* 2. 288. f. Fuchs. *Hist.* 76. f. Camer. *Epit.* 677 ?

A. campoclarens. Column. *Ecphr.* 73. t. 74.

Tway-blade St. John's-wort. Petiv. *H. Brit.* *t.* 60. f. 7.

On wild bushy hills, on a gravelly or chalky soil.

Perennial. July.

Root fibrous, scarcely creeping. Stems very straight and upright, about 2 feet high, simple, round, smooth, most leafy in the lower part. Leaves $1\frac{1}{2}$ or 2 inches long, sessile, clasping the stem, ovate, generally rather acute, smooth, besprinkled with small pellucid dots; the under side paler, marked at the edge with black dots. Panicle dense, of a few elongated forked branches, not leafy. Bractæas opposite, lanceolate, pinnatifid, fringed, like the lanceolate calyx, with numerous, dark, stalked, viscid glands. Pet. pale lemon-coloured, elliptical, entire, without spots or glands.

Though not an ostentatious plant, this species well deserves John Bauhin's epithet of "most elegant." The glutinous dark fringes of its calyx and bractæas resemble the glands of a Moss Rose.

8. *H. barbatum*. Bearded St. John's-wort.

Styles three. Calyx and petals fringed and dotted. Stem erect, somewhat angular. Leaves ovate, naked, dotted and glandular, clasping the stem.

H. barbatum. Jacq. *Austr.* *v.* 3. 33. t. 259. Linn. *Hyper.* 6. *Amæn. Acad.* *v.* 8. 323. Willd. *Sp. Pl.* *v.* 3. 1462. Comp. ed. 4. 126. Engl. Bot. *v.* 28. t. 1986. Hook. Scot. 222.

In bushy places in Scotland.

By the side of a hedge, near the wood of Aberdalgy in Strath Earn, Perthshire. *Mr. G. Don.*

Perennial. *September, October.*

Stems herbaceous, a foot or more in height, erect, straight, leafy, simple, except at the top, smooth, round; slightly quadrangular in the upper part; purplish below. *Leaves* sessile, clasping the stem, ovate, entire, slightly revolute, smooth, veiny, besprinkled with pellucid dots, and less regularly with dark glandular spots, a little prominent on both sides in the dried specimen; the lower ones most obtuse; upper somewhat pointed. *Fl.* bright yellow, in a terminal, upright, forked, somewhat leafy panicle. *Bractees*, as well as the segments of the *calyx*, ovate, acute, plentifully streaked and dotted with dark purple, the edges of both densely and elegantly fringed with long pale hairs, not tipped with black glands like the preceding species. *Pet.* obovate, minutely fringed or toothed, especially at the extremity, and marked with black glandular dots. *Stam.* in 3 sets. *Caps.* covered with resinous dots, but not wrinkled.

Dr. Hooker well observes that the long hairs of the margin of the *calyx* render this species very distinct. No botanist has remarked its great affinity to *H. perfoliatum* of Linnæus, or to Willdenow's *ciliatum*, to the latter of which belongs the hitherto neglected synonym of *Columna*, *Androsæmum alterum apulum*, *Ecphr.* 77. t. 78. f. 1. In both these the *calyx* is fringed with short glandular bristles, and in the former of them the *capsule* is strongly wrinkled transversely. DeCandolle seems to have omitted this species.

9. *H. hirsutum*. Hairy St. John's-wort.

Styles three. Calyx lanceolate, with glandular serratures. Stem erect, round. Leaves ovate, downy.

H. hirsutum. *Linn. Sp. Pl.* 1105. *Willd. v.* 3. 1465. *Fl. Br.* 804. *Engl. Bot. v.* 17. t. 1156. *Curt. Lond. fasc.* 3. t. 49. *Hook. Scot.* 222. *DeCand. Prodr. v.* 1. 551. *Fl. Dan. t.* 802. *Ehrh. Herb.* 160.

H. n. 1043. *Hall. Hist. v.* 2. 7.

H. Androsæmum dictum. *Raii Syn.* 343. *Bauh. Hist. v.* 3. p. 2. 382. f.

H. in dumetis nascens. *Trag. Hist.* 73. f. 2.

Androsæmum Ascyron dictum, caule rotundo hirsuto. *Moris. v.* 2. 471. sect. 5. t. 6. f. 11.

A. alterum hirsutum. *Column. Ecphr.* 75. t. 74. f. 2.

Ascyrum. *Fuchs. Hist.* 74. f. *Matth. Valgr. v.* 2. 287. f. *Camer. Epit.* 676. larger f. *Dod. Pempt.* 78. f. *Ger. Em.* 542. f. *Lob. Ic.* 399. f. *Dalech. Hist.* 1155. f.

Tutsan St. John's-wort. *Petiv. H. Brit. t.* 60. f. 10.

In thickets and hedges, chiefly on a dry chalky soil.

Perennial. *June, July.*

Root branching at the crown, sending up several erect *stems*, which are about 2 feet high, straight, round, leafy, paniced at the top, with or without short axillary branches, and clothed, like the foliage and stalks, with short downy hairiness, very soft to the touch. *Leaves* sessile, ovate, bluntish, furnished with pellucid dots, intermixed with a few dark ones; paler and most downy beneath, with many lateral ribs. *Fl.* very numerous, of a uniform bright yellow, about the size of *H. perforatum*. Segments of the *calyx* lanceolate, ribbed, smooth, fringed, like the *bracteas*, with numerous black viscid glands on shortish stalks, such as also terminate the *petals*. *Caps.* smooth and even.

The *Ascyrum* of the old herbalists appears, by their representation of the *calyx*, to be this plant, and not *H. quadrangulum*, to which last some of their synonyms have been referred. If, instead of copying, from Dioscorides and each other, various futile accounts which afford no information, they had plainly told us whether their plant were smooth or downy, with a round or four-winged *stem*, all would have been clear and satisfactory.

10. *H. pulchrum*. Small Upright St. John's-wort.

Styles three. *Calyx* ovate, with glandular serratures. *Stem* erect, round. *Leaves* clasping the stem, heart-shaped, smooth.

H. pulchrum. *Linn. Sp. Pl.* 1106. *Willd. v. 3.* 1468. *Fl. Br.* 804. *Engl. Bot. v. 18. t.* 1227. *Curt. Lond. fasc. 1. t.* 56. *Hook. Scot.* 222. *Trag. Hist.* 74. *f. DeCand. Prodr. v. 1.* 551. *Fl. Dan. t.* 75, not 73. *Ehrh. Phytoph.* 36.

H. n. 1041. *Hall. Hist. v. 2.* 6.

H. pulchrum *Tragi. Raii Syn.* 342. *Bauh. Hist. v. 3. p. 2.* 383. *f.*

Androsæmum. Lonic. Kreuterb. 158. *f.* 3.

Upright St. John's-wort. *Petiv. H. Brit. t.* 60. *f.* 6.

In woods and bushy heathy places on a clay soil, frequent.

Perennial. *July.*

Root branching, woody and tough. *Herb* very smooth. *Stem* 12 or 18 inches high, erect, straight, slender, round, rigid, leafy, paniced at the top, and with many short leafy axillary branches all the way up. *Leaves* firm and rigid, sessile, often deflexed, heart-shaped, or ovate, short, convex; dark green, with a glaucous tinge, above; paler beneath; the lower ones soon becoming yellow, or more frequently bright red, which combined with the golden *flowers*, tipped externally with scarlet, and the red *anthers*, gives the plant a peculiarly gay aspect, rendering it worthy of the appellation of *pulchrum*, adopted originally by the venerable *Tragus*. The segments of the *calyx* are ovate, and their black glandular fringes, like those of the *petals*, add also to the beauty of the *flowers*. The *capsule* is ovate, smooth and even.

11. *H. elodes*. Marsh St. John's-wort.

Styles three. Calyx obtuse, glandular. Stem procumbent, creeping, round, shaggy, like the roundish obtuse leaves. Panicle of few flowers.

H. elodes. *Linn. Sp. Pl.* 1106. *Willd. v. 3.* 1465. *Fl. Br.* 805. *Engl.*

Bot. v. 2. t. 109. *Dicks. H. Sicc. fasc. 2.* 13. *Hook. Scot.* 223.

H. tomentosum. *Lob. Ic.* 400. *f.* *Ger. Em.* 540. *f.*

Ascyron supinum villosum palustre. *Raii Syn.* 344.

A. supinum elodes. *Clus. Exot. app. 2. auctuar.* 7. *Ger. Em.* 542.

Caryophyllus palustris, foliis subrotundis incanis, floribus aureis.
Mentz. Pugill. t. 7.

Hoary St. Peter's-wort. *Petiv. H. Brit. t. 60. f. 12.*

In spongy, especially rather mountainous, bogs.

Perennial. *July, August.*

Root of many long fibres. *Stems* procumbent or prostrate, among wet mosses or grass, branched at the bottom only, where they throw out several radicles; they are round, or obscurely angular, about a span long, regularly leafy, of a spongy texture, and shaggy with soft deflexed hairs. *Leaves* soft and shaggy also, roundish, or nearly orbicular, with several radiating ribs. *Panicle* at first terminal, becoming subsequently lateral, imperfectly forked, of few flowers, whose partial stalks are smooth. *Bracteas* minute, ovate, fringed with stalked glands. *Cal.* divided scarcely more than half way, into 5 obtuse ovate segments, fringed with glands. *Pet.* expanding in sunshine only, pale yellow, with green ribs. *Filam.* much less deeply subdivided than in our other species. *Caps.* ribbed.

Some of the earlier writers confound this species, chiefly growing in England, Holland, and the north of France, with *H. tomentosum* of Linnæus, a native of Spain and the south of France. This latter is *H. supinum tomentosum hispanicum* of Clusius, in his *Hist. v. 2.* 181. *f. 1*, though the inflorescence is incorrect; while his *alterum, f. 2*, is our *elodes*, the cut being that of Lobel and Gerarde above cited. The *tomentosum* has longer, more upright, stems; oblong leaves; a forked panicle of many flowers, with racemose branches; downy partial flower-stalks, bracteas and calyx, the segments of the latter being deep and acute, the bracteas lanceolate, and taper-pointed.

Class XIX. SYNGENESIA.

Anthers united into a tube. Flowers compound.

Order I. POLYGAMIA ÆQUALIS. Florets all perfect, each having 5 stamens and 1 pistil, and producing 1 seed.

* *Corolla of each floret ligulate. Semiflosculosi of Tournefort.*

379. HYPOCHÆRIS. *Receptacle chaffy. Seed-down feathery. Calyx somewhat imbricated.*

381. CICHORIUM. *Recept. slightly chaffy. Down chaffy, shorter than the seed. Cal. double.*

378. CREPIS. *Recept. roughish. Down simple, partly stalked. Cal. double; outermost lax, tumid, deciduous.*

377. HIERACIUM. *Recept. almost naked, dotted. Down simple, sessile. Cal. imbricated, ovate.*

376. APARGIA. *Recept. naked, dotted. Down feathery, sessile, unequal and various. Cal. double; innermost imbricated.*

371. PICRIS. *Recept. naked. Down feathery. Seeds furrowed transversely. Cal. double; innermost equal; outer lax.*

370. TRAGOPOGON. *Recept. naked. Down stalked, feathery. Cal. simple, of several equal scales, in 2 rows.*

375. LEONTODON. *Recept. naked. Down stalked, simple. Cal. imbricated, double; scales of the outermost lax.*

373. LACTUCA. *Recept. naked. Down stalked, simple. Cal. imbricated, simple, cylindrical; scales membranous at the margin.*

374. *PRENANTHES*. *Recept.* naked. *Down* nearly sessile, simple. *Cal.* double. *Florets* in a single row.
372. *SONCHUS*. *Recept.* naked. *Down* sessile, simple. *Cal.* simple, imbricated, swelling at the base.
380. *LAPSANA*. *Recept.* naked. *Down* none. *Cal.* double; innermost of equal channelled scales.

** *Florets all tubular, lax and spreading in the limb. Capitati.*

387. *CARLINA*. *Calyx* swelling; outer scales spinous; inner coloured, polished, radiant. *Recept.* chaffy. *Down* feathery.
382. *ARCTIUM*. *Cal.* globose; scales spinous, hooked, inflexed.
384. *CARDUUS*. *Cal.* tumid, imbricated; scales spinous. *Recept.* hairy. *Down* deciduous, capillary, roughish.
385. *CNICUS*. *Cal.* tumid, imbricated; scales spinous. *Recept.* hairy. *Down* deciduous, feathery.
386. *ONOPORDUM*. *Cal.* tumid; scales spinous, spreading. *Recept.* cellular, somewhat chaffy.
383. *SERRATULA*. *Cal.* nearly cylindrical, imbricated; scales unarmed. *Down* permanent.

Centaurea 1.

*** *Florets all tubular, parallel, crowded, nearly on a level at the top. Discoid.*

389. *EUPATORIUM*. *Recept.* naked. *Down* rough. *Cal.* imbricated, oblong. *Style* cloven half way down, prominent.
390. *CHRYSOCOMA*. *Recept.* naked. *Down* rough. *Cal.* imbricated, hemispherical. *Style* scarcely longer than the florets.
388. *BIDENS*. *Recept.* chaffy. *Down* rough with reversed prickles. *Cal.* of many parallel, channelled scales. *Cor.* occasionally radiated.
391. *DIOTIS*. *Recept.* chaffy, with hairy-tipped scales. *Down* none. *Cal.* imbricated, hemispherical. *Florets* with 2 spurs, which border the seed.

Tanacetum. *Senecio* 1. *Aster* 1. *Anthemis* 2.

Order II. POLYGAMIA SUPERFLUA.

Florets all perfect and fertile, though those of the circumference have no stamens.

* *Corolla of the marginal florets obsolete, or wanting.*
Discoid.

392. TANACETUM. *Recept.* naked. *Seed* with a membranous crown. *Cal.* imbricated, hemispherical. *Florets* of the circumference 3-cleft, obsolete, sometimes wanting.
395. CONYZA. *Recept.* naked. *Down* rough. *Cal.* imbricated, roundish. *Fl.* of the circumference 3-cleft.
394. GNAPHALIUM. *Recept.* naked. *Down* rough, or feathery. *Cal.* imbricated; scales filmy, coloured. *Fl.* of the circumference awl-shaped.
393. ARTEMISIA. *Recept.* either naked or hairy. *Down* none. *Cal.* imbricated; scales rounded, converging. *Fl.* of the circumference awl-shaped, entire.

Tussilago 2.

** *Corolla of the marginal florets ligulate. Radiant.*

404. BELLIS. *Recept.* naked, conical. *Down* none. *Cal.* hemispherical; scales equal. *Seed* obovate.
407. MATRICARIA. *Recept.* naked, nearly cylindrical. *Down* none. *Cal.* nearly flat, imbricated; scales membranous at the edges.
405. CHRYSANTHEMUM. *Recept.* naked, rather convex. *Down* none. *Cal.* hemispherical, imbricated; scales with a dilated membranous border.
406. PYRETHRUM. *Recept.* naked. *Seed* crowned with a border. *Cal.* hemispherical, imbricated; scales rather acute, membranous at the edges.
403. DORONICUM. *Recept.* naked. *Down* simple; wanting on the seeds of the radius. *Cal.* a double row of equal scales, longer than the disk.
401. INULA. *Recept.* naked. *Down* simple. *Cal.* imbricated. *Florets* of the radius very numerous, linear. *Anthers* with 2 bristles at the base.
396. ERIGERON. *Recept.* naked. *Down* simple. *Cal.*

- imbricated. *Flor.* of the radius numerous, linear, very narrow. *Anth.* simple.
400. SOLIDAGO. *Recept.* naked, pitted. *Down* simple. *Cal.* imbricated, with close scales. *Flor.* of the radius about 5.
399. ASTER. *Recept.* naked. *Down* simple. *Cal.* imbricated; lowermost scales spreading. *Flor.* of the radius more than 10.
398. SENECEO. *Recept.* naked. *Down* simple. *Cal.* double; the innermost cylindrical, of numerous equal scales; outer of several minute ones; scales all withered at the extremity.
397. TUSSILAGO. *Recept.* naked. *Down* simple. *Cal.* simple, tumid at the base; scales numerous, equal, somewhat membranous. *Seed* obovate, compressed.
402. CINERARIA. *Recept.* naked. *Down* simple. *Cal.* simple, cylindrical; scales numerous, equal. *Seed* quadrangular.
408. ANTHEMIS. *Recept.* chaffy. *Seed* crowned with a slight border. *Cal.* hemispherical; scales nearly equal. *Flor.* of the radius numerous, oblong.
409. ACHILLEA. *Recept.* chaffy. *Down* none. *Cal.* ovate; scales imbricated, unequal. *Flor.* of the radius 5—10, roundish, somewhat heart-shaped.

Bidens 2.

Order III. POLYGAMIA FRUSTRANEA.

Florets of the disk perfect and fertile; those of the circumference neuter.

410. CENTAUREA. *Recept.* bristly. *Down* simple, or feathery, rarely wanting. *Flor.* of the radius funnel-shaped, dilated, irregular, without stamens or style.

A natural tribe, consisting of the genuine *Compound Flowers*, having a common *calyx*, and combined *anthers*.

Compositæ. Linn. 49. *Cinarocephalæ*, 54; *Cichoraceæ*, 53; and *Corymbiferae*, 55, of Jussieu. See *Grammar* 120—125.

Common Calyx inferior, containing numerous *florets*, seated on a *common receptacle*. It contracts after flowering, but becomes reflexed, in general, when the *seeds* are ripe. It is either *simple*, consisting of a single row of scales encompassing the florets; or *imbricated*, when the numerous scales lie one over another, the outer ones being gradually smaller; or *double*, when one row of equal scales, united at the base, surrounds the florets, and is accompanied by a much smaller external set of scales at the bottom, often of a very different texture, habit, or duration from the inner and larger ones.

Compound Flower consisting of various descriptions of *florets*, each monopetalous, very rarely wanting the *corolla* entirely, but various as to *stamens*, *pistil*, or *seed*.

1. *Ligulate Florets*, tubular at the base; ligulate, or strap-shaped, and unilateral, in the limb; furnished with both *stamens* and *pistil*, or only with the latter, in a more or less perfect state.

2. *Tubular Florets*, cylindrical, with a regular equal limb, almost invariably 5-cleft; furnished generally with *stamens* and *pistil*, and usually producing perfect *seed*.

3. *Neuter Florets*, funnel-shaped, spreading upwards, without *stamens* or *style*, mostly irregular, entirely inefficient.

Nectary altogether wanting, the honey lodged in each floret being, apparently, secreted by the tube of its corolla.

Stamens 5, very rarely or accidentally 4 only; *filaments* capillary, from the mouth of the tube of each floret, equal, sometimes irritable. *Anthers* vertical, linear-oblong, united laterally into a cylinder, very rarely separate, permanent.

Germen, with respect to its floret, inferior, simple, often crowned with a partial *calyx*, which becomes the *crown*, *border*, or *down* of the seed. *Style* solitary, thread-shaped, about the length of the corolla. *Stigma* simple, or cloven, sometimes thickened, and in that case less perfect, or totally inefficient.

Seed-vessel none, the *common calyx* serving to shelter the seeds till ripe, and then spreading widely, especially in dry weather, to let them escape.

Seed one to each floret, sometimes a mere rudiment; when perfect oblong, or obovate, angular or compressed; either simple and naked at the summit; or crowned with an elevated, entire or lobed, border; or with *seed-down*, consisting of simple, usually rough, hairs; or of feathery

tufts ; or of variously proportioned bristly scales, all mostly permanent, sometimes deciduous. *Albumen* none. *Cotyledons* 2. *Radicle* inferior.

The *Cichoraceæ*, Juss. 53, have ligulate *florets* only, all perfect and fertile. The plants are herbaceous, milky, bitter ; with alternate *leaves*, and generally yellow *flowers*, open chiefly in a morning. *Cinarocephalæ*, Juss. 54, have tubular *florets* only, regular when perfect, but sometimes neuter and irregular. Plants with generally prickly foliage, and red or purple *flowers*. *Corymbiferæ*, Juss. 55, have tubular *florets* in the disk, which is usually yellow, sometimes white ; and ligulate ones in the radius or circumference, various in colour. *Leaves* in some opposite. *Florets* variable as to their degree of perfection. Qualities various, but generally not noxious.

For irregularities and exceptions, which are very few, and chiefly concern exotic plants, see *Grammar*.

Some recent botanists of the French school, rejecting the idea of a *compound flower*, have given the name of *involucrum* to what has hitherto been denominated by Jussieu, as well as Linnæus, a *common calyx*. I cannot subscribe to the theory, nor to the alteration founded upon it ; nor can I deny these plants a naked *seed*, any more than the umbelliferous tribe, the grasses, or the *Didynamia Gymnospermia*. The student may judge for himself ; but if he enters prematurely into such speculations, he will soon find himself bewildered in a labyrinth of doubts and theories. It will be still worse if, by neglecting the practical study of nature, and adopting innovations, which are generally long-exploded fancies in a new form, he throws away his clue, and follows blindfold, while he imagines he is taking the lead.



SYNGENESIA—POLYG.-ÆQUALIS.

* *Florets* all ligulate ; an entirely natural order.

Compositæ, β , *semiflosculosæ*. Linn. 49. *Cichoraceæ*. Juss. 53.
See *Grammar* 120.

370. TRAGOPOGON. Goat's-beard.

Linn. Gen. 398. *Juss.* 170. *Fl. Br.* 812. *Tourn. t.* 270. *Lam. t.* 646. *Gærtn. t.* 159.

Common Cal. simple, of several lanceolate equal scales, ranged alternately in two rows, all connected at the base, permanent. *Cor.* compound, imbricated, uniform; *florets* numerous, all perfect, uniform, ligulate, abrupt, with 5 teeth; the outer ones rather the longest. *Filam.* 5, from the tube, capillary, very short. *Anth.* in a cylindrical tube. *Germ.* obovate. *Style* thread-shaped, as long as the anthers. *Stigm.* 2, revolute. *Seed-vessel* none, except the converging, pointed *common calyx*, about as long as the seeds, tumid at the base, finally reflexed. *Seed* 1 to each floret, oblong, angular, striated, rough, tapering at each end, crowned by the orbicular flattish *seed-down*, consisting of about 30 spreading feathery rays, on a long awl-shaped stalk. *Recept.* flat, naked, minutely cellular.

Biennial, nearly smooth, herbs, with long, undivided, tapering *leaves*, sheathing at the base. *Fl.* terminal, solitary, large, erect, yellow or purple, closing before noon.

1. *T. pratensis*. Yellow Goat's-beard.

Calyx about equal to the corolla. Leaves keeled, tapering; dilated and somewhat undulated at the base. Flower-stalk cylindrical.

T. pratensis. *Linn. Sp. Pl.* 1109. *Willd. v.* 3. 1492. *Fl. Br.* 812. *Engl. Bot. v.* 7. *t.* 434. *Hook. Scot.* 226. *Fl. Dan. t.* 906. *Bull. Fr. t.* 209.

T. n. 8. *Hall. Hist. v.* 1. 5.

T. luteum. *Raii Syn.* 171. *Ger. Em.* 735. *f.*

Tragopogon. *Fuchs. Hist.* 821. *f.* *Matth. Valgr. v.* 1. 490. *f.*

T. flore luteo. *Bauh. Hist. v.* 2. 1058. *f.* 1. 1059.

Barbula hirci. *Trag. Hist.* 280. *f.* *Camer. Epit.* 312. *f.*

Hirci barba. *Cord. Hist.* 156. *f.*

Narrow and Common Goat's-beard. *Petiv. H. Brit. t.* 15. *f.* 6, 7.

In grassy pastures and meadows.

Biennial. *June.*

Root tapering. Whole *herb* very smooth, abounding with milky juice, rather bitter, but not acrid. *Stems* several, branching, erect, round, leafy, 1½ or 2 feet high, often purplish. *Leaves* alternate, long and taper-pointed, often flaccid, or curling, at the extremity; inflated at the base; several of them radical. *Fl.* large, 2 inches wide, bright yellow, solitary, on terminal stalks, opening

early in the morning, and closing before noon, except in very cloudy weather. *Florets* as long as the calyx, sometimes longer. *Anth.* brown or purplish. *Germ.* crowned with hairs. *Seeds* large, curved, furrowed, light brown, their feathery crowns lightly cohering in the form of a large cobweb-like ball.

2. *T. porrifolius*. Purple Goat's-beard.

Calyx half as long again as the corolla. Leaves tapering, straight. Flower-stalk swelling upwards.

T. porrifolius. *Linn. Sp. Pl.* 1110. *Willd. v. 3.* 1493. *Fl. Br.* 813. *Engl. Bot. v. 9. t.* 638. *Hook. Scot.* 226. *Hopkirk Glott.* 97. *Jacq. Coll. v. 1.* 99. *Ic. Rar. t.* 159. *Fl. Dan. t.* 797.

T. n. 9. *Hall. Hist. v. 1.* 5.

T. purpureum. *Raii Syn.* 171. *Ger. Em.* 735. *f.*

T. flore purpureo. *Bauh. Hist. v. 2.* 1058. *f. 2.* 1059.

T. alterum. *Matth. Valgr. v. 1.* 491. *f.*

Barbula hirci altera. *Camer. Epit.* 313. *f.*

Purple Goat's-beard. *Petiv. H. Brit. t.* 15. *f. 8.*

In moist meadows, near great rivers.

On the banks of the Chalder, near Whalley, Lancashire. *Gerarde*. In many parts of Cornwall, according to Dr. Gunthorp. *Merrett*. About Carlisle and Rose Castle; Mr. Nicholson. *Dill*. In the marshes below Woolwich, and near Edmonton. *Blackstone*. At North Benfleet, near Billericay, Essex. *Rev. R. B. Francis*. In the meadows below St. Vincent's rocks, Bristol. *Mr. D. Turner and Mr. Sowerby*.

Biennial. *May, June*.

Root tapering, abounding with milky juice, on which account the plant was formerly much cultivated for boiling or stewing; but its place is now generally supplied by the *Scorzonera hispanica*. *Herb* smooth, 3 or 4 feet high, glaucous. *Leaves* neither undulated at the base, nor curled at the point. *Flower-stalks* hollow and swelling gradually upward. *Fl.* dull purple, with still darker *anthers*, the nearly equal *calyx* extending much beyond the *florets*. They close before noon.

371. PICRIS. Ox-tongue.

Linn. Gen. 399. *Juss.* 170. *Fl. Br.* 814. *Lam. t.* 648. *Gærtn. t.* 159.

Helminthotheca. *Vaill. Mém. de l'Ac. des Sc.* 731. *f. 25, 26, 51.*

Helmintia. *Juss.* 170. *Willd. v. 3.* 1607. *Lam. t.* 648. *Gærtn. t.* 159.

Common Cal. double; the outer of several flat, lax, converging scales; inner ovate, of many equal, parallel, close leaves, permanent. *Cor.* compound, imbricated, uniform; *florets* numerous, perfect, uniform, ligulate,

abrupt, with 5 teeth. *Filam.* 5, capillary, very short. *Anth.* in a cylindrical tube. *Germ.* nearly ovate. *Style* thread-shaped, the length of the stamens. *Stigm.* 2, reflexed. *Seed-vessel* none, except the permanent calyx, finally reflexed. *Seed* swelling, obtuse, transversely wrinkled. *Down* feathery, either sessile or stalked. *Recept.* naked, dotted.

Annual, biennial, or perennial, upright branching leafy *herbs*, rough with rigid or bristly hairs, and extremely bitter, as the generic name imports. *Leaves* oblong; toothed or sinuated. *Fl.* yellow.

1. *P. echioides*. Bristly Ox-tongue.

Outer calyx of 5 broad prickly scales. Down stalked. Leaves wavy.

P. echioides. Linn. *Sp. Pl.* 1114. *Fl. Br.* 814. *Engl. Bot.* v. 14. t. 972. *Curt. Lond. fasc.* 3. t. 51.

Helmintia echioides. Willd. v. 3. 1607. *Gærtn.* v. 2. 368.

Hieracium echioides, capitulis cardui benedicti. *Bauh. Pin.* 128.

Raii Syn. 166. *Bauh. Hist.* v. 2. 1028. f. 1029.

Buglossum luteum. *Ger. Em.* 798. f.

B. echioides luteum, *Hieracio cognatum*. *Lob. Ic.* 577. f.

Ox-tongue Hawkweed. *Petiv. H. Brit.* t. 12. f. 12.

About hedges, the borders of fields, and in ground newly cleared, on a clay soil.

Annual. *June, July.*

Root tapering, and, like the whole plant, abounding with a somewhat milky, extremely bitter, juice. *Herb* bright shining green, beset with rigid very pungent bristles, each springing from a white tubercle or wart. *Stem* round, furrowed, solid, branched, leafy, 2 or 3 feet high. *Lower leaves* lanceolate; *upper* heart-shaped, clasping the stem. *Fl.* an inch broad, of a bright golden yellow. *Outer calyx* of 5 broad, heart-shaped, loosely spreading leaves, or scales, as long as the inner one, and fringed with prickles. *Seeds* curiously wrinkled or furrowed transversely; a more striking and important character of the genus than the insertion of their feathery *down*, which in this species is elevated on a stalk about its own length.

M. Reynier gathered *P. echioides* in Switzerland, but it is not in Haller.

A nearly smooth variety of the plant before us is represented in Hermann's *Paradisus*, p. 185.

2. *P. hieracioides*. Hawkweed Ox-tongue.

Outer calyx of numerous scales, much shorter than the

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inner. Leaves lanceolate, wavy; radical ones toothed. Down sessile. Stem rough.

P. hieracioides. Linn. *Sp. Pl.* 1115. Willd. v. 3. 1556. *Fl. Br.* 815. *Engl. Bot.* v. 3. t. 196. Hook. *Scot.* 226. *Fl. Dan.* t. 1522.

P. n. 24. Hall. *Hist.* v. 1. 11.

Hedypnois hieracioides. Huds. 342.

Hieracium asperum majori flore, in agrorum limitibus. Raii *Syn.* 167. Bauh. *Hist.* v. 2. 1029. f.

H. asperum. Ger. *Em.* 298. f.

Curled Hawkweed. Petiv. *H. Brit.* t. 12. f. 11.

On dry banks, or in the borders of fields, on a gravelly or chalky soil.

Biennial. July, August.

Herb dark green, rough with short, coarse, not bristly or pungent hairs. *Stem* 3 feet high, with many spreading leafy branches, furrowed, solid, often purplish; the ultimate subdivisions unequally corymbose. *Leaves* acute, wavy, lanceolate; the radical ones unequally and broadly toothed, on bordered footstalks; upper somewhat heart-shaped, and clasping, at the base. *Fl.* bright yellow, rather larger than the last, solitary, on bracteated stalks; the bracteas scattered, lanceolate. *Cal.* rough with, often forked, prominent bristles, among soft cobweb-like hoariness; the outer one loosely spreading, of similar scales to the inner, but unequal, and all much shorter. *Seeds* furrowed and transversely wrinkled like the foregoing. *Down* sessile, spreading, unequal, slightly feathery.

372. SONCHUS. Sow-thistle.

Linn. *Gen.* 400. Juss. 169. *Fl. Br.* 815. Tourn. t. 268. Lam. t. 649. Gærtn. t. 158.

Common Cal. swelling at the base, of numerous, linear, imbricated, unequal, acute scales. *Cor.* compound, imbricated, uniform; *florets* numerous, perfect, equal, ligulate, abrupt, with 4 or 5 teeth. *Filam.* 5, capillary. *Anth.* in a cylindrical tube. *Germ.* rather obovate. *Style* thread-shaped, full as long as the stamens. *Stigm.* 2, reflexed. *Seed-vessel* none, the permanent calyx converging into a depressed, orbicular, pointed form. *Seed* oblong, roughish. *Down* of many simple hairs, sessile. *Recept.* naked, dotted.

A rather large and very natural genus, of annual or perennial, rarely shrubby, generally tall, milky, bitter plants, with hollow stems; and more or less pinnatifid or lyrate leaves, toothed or prickly at their edges. The surface of the *herbage* is usually smooth; that of the *inflorescence* hairy, or glandular, often viscid. *Fl.* yellow, rarely blue.

1. *S. cæruleus*. Blue Sow-thistle.

Flower-stalks and calyx bristly, racemose. Leaves somewhat lyrate; their terminal lobe triangular and very large.

S. cæruleus. *Camer. Epit.* 281. *f.* *Fl. Br.* 815. *Engl. Bot.* v. 34. t. 2425. *Hull* 227. *Hook. Scot.* 226.

S. cæruleus latifolius. *Bauh. Hist.* v. 2. 1005. *f.* 1006.

S. canadensis. *Linn. Sp. Pl.* 1115. *With.* 674. *Original specimen from Kalm in the Linnæan Herbarium.*

S. alpinus. *Willd.* v. 3. 1519. *Wahlenb. Lapp.* 194. *Huds.* 336. *Fl. Dan.* t. 182. *Frælich in Ust. Annal.* v. 1. 24.

S. n. 20. *Hall. Hist.* v. 1. 9.

S. flore cæruleo. *Ger. Em.* 294. *f.*

O₁ the Highland mountains of Scotland, but rare.

O₁ Loch-na-gore, Aberdeenshire, and on the Clova mountains. *Mr. G. Don.*

Perennial. *July, August.*

Root tuberous and woody, slightly creeping. *Stems* upright, a yard high, round, simple, leafy, furrowed; smooth in the lower part; besprinkled above with prominent, brown, glandular, viscid hairs. *Leaves* smooth, pliant, variously lyrate; arrow-shaped at the base, with a winged *footstalk*; their terminal lobe large, triangular, somewhat toothed; their under side a little glaucous. *Fl.* large, numerous, and handsome, of a fine blue, composing a simple, terminal *cluster*, whose *stalks*, as well as the linear *bracteas*, and the *calyx*, are clothed with copious, brown, glutinous, bristly hairs. *Anth.* red. *Seeds* compressed, striated. *Down* rough.

Wallis, by a strange mistake in his History of Northumberland, was the cause of this fine alpine plant being reckoned by Hudson a native of Britain; but what Wallis took for it is the *Cichorium Intybus*. The Blue Sow-thistle however remains on our list, having been discovered in the Highlands by the late Mr. Don. It abounds on the principal mountains of Europe, from Lapland to Switzerland. Some botanists contend that this is the real *S. alpinus* of Linnæus, and the accurate Dr. Wahlenberg declares it to be the Lapland plant so denominated; what is preserved under that name in the Linnæan herbarium, and figured in *Sm. Plant. Ic.* t. 21, not being known to him as a native of Lapland. This last species however alone answers to the character in the *Sp. Plantarum*, and cannot but remain as the real *S. alpinus*. All ambiguity is avoided by retaining the old appellation of *cæruleus* for our plant.

2. *S. palustris*. Tall Marsh Sow-thistle.

Flower-stalks and calyx bristly, somewhat umbellate. Leaves runcinate, rough-edged; arrow-shaped at the base.

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- S. palustris*. *Linn. Sp. Pl.* 1116. *Willd. v. 3.* 1512. *Fl. Br.* 816. *Engl. Bot. v. 13. t. 935.* *Curt. Lond. fasc. 5. t. 59.*
S. arvensis. *Fl. Dan. t.* 606.
S. tricubitalis, folio cuspidato. *Merr. Pin.* 115. *Raii Syn.* 163.
S. arborescens alter. *Ger. Em.* 294. *f.*
S. lævis lanceatus acutifolius. *Loes. Pruss.* 258. *t.* 79.
S. lævior austriacus, vel altissimus. *Clus. Hist. v. 2.* 147. *f.*
S. tertius. *Clus. Pann.* 654. *f.* 653.
S. paludosus altissimus, hastato folio. *Moris. v. 3.* 61.
 Tall Marsh Sow-thistle. *Petiv. H. Brit. t.* 14. *f.* 7.

In marshes near the banks of large rivers.

About Greenwich and Blackwall. *Ray, Curtis.* Near Streatham ferry, in the isle of Ely. *Relhan.*

Perennial. *July, August.*

One of our largest herbaceous plants, being from 6 to 8 feet high.

Root fleshy, branching, not creeping, by which, as Mr. Curtis very correctly observes, it differs essentially from the following more common species; the whole *herb* being moreover twice or thrice as large, though the *flowers* are smaller, and usually a little paler. *Stem* cylindrical, though angular and furrowed, scarcely branched, leafy, hollow, with many transverse internal partitions. *Leaves* large, deeply pinnatifid, smooth, except at the edges, where they are fringed with copious, short, rigid, bristly hairs; their lobes narrow, acute, for the most part directed downwards; the uppermost leaves simply hastate, sessile, linear, serrated. *Panicles* terminal, umbellate or cymose, their stalks rough with black, bristly, glandular hairs, as is likewise the *calyx*. *Cor.* lemon-coloured. *Seeds* furrowed. *Down* simple, smooth.

Haller only guessed this to be a variety of *S. arvensis*, without having compared them; a rather rash mode of judging, calculated to mislead all who practise it.

3. *S. arvensis*. Corn Sow-thistle.

Flower-stalks and calyx bristly, somewhat umbellate. Leaves runcinate, finely-toothed, heart-shaped at the base. Root creeping.

- S. arvensis*. *Linn. Sp. Pl.* 1116. *Willd. v. 3.* 1512. *Fl. Br.* 817. *Engl. Bot. v. 10. t. 674.* *Curt. Lond. fasc. 4. t. 53.* *Hook. Scot.* 226.
S. n. 23. *Hall. Hist. v. 1.* 11.
S. repens, multis *Hieracium majus*. *Raii Syn.* 163. *Bauh. Hist. v. 2.* 1017. *f.* 1018.
S. arborescens. *Ger. Em.* 294. *f.*
S. hieracites major repens, calyculo hirsuto inter segetes. *Moris. v. 3.* 61. *sect. 7. t. 6. f.* 12.
Hieracium majus. *Fuchs. Hist.* 319. *f.* *Ic.* 182. *f.*

Corn Sow-thistle. *Petiv. H. Brit. t. 14. f. 6.*

In corn fields and hedges, on a clay soil.

Perennial. *August.*

Root fleshy, milky, creeping widely, with oblong, tuberous, white branches, which often render it very difficult of extirpation. *Stem* 3 or 4 feet high, not much branched, round, leafy, hollow, rough towards the top, with viscid, black hairs. *Leaves* runcinate, heart-shaped, rather than arrow-shaped, at the base, and bordered with little sharp unequal teeth, not with bristly hairs like the preceding; the upper ones undivided and entire. *Panicle* cymose, or imperfectly umbellate, rough with dark glandular hairs; sometimes it is compound and many-flowered. *Cal.* in like manner hairy. *Fl.* deep yellow, often 2 inches wide, and very conspicuous; frequently reddish underneath. *Tube* of each *floret* hairy. *Seed* furrowed. *Down* smooth.

4. *S. oleraceus*. Common Sow-thistle.

Flower-stalks cottony. Calyx smooth. Leaves runcinate, toothed.

S. oleraceus. *Linn. Sp. Pl.* 1116. *Willd. v. 3.* 1514. *Fl. Br.* 817. *Engl. Bot. v. 12. t.* 843. *Curt. Lond. fasc. 2. t.* 58. *Hook. Scot.* 227.

S. n. 21 γ. *Hall. Hist. v. 1.* 10.

S. lævis. *Raii Syn.* 162. *Ger. Em.* 292. *f.* *Matth. Valgr. v. 1.* 452. *f.* *Camer. Epit.* 279. *f.* *Dod. Pempt.* 643. *f.*

S. lævis vulgaris, foliis laciniosis. *Lob. Ic.* 235. *f.*

S. lævis, laciniatis foliis. *Dalech. Hist.* 572. *f.*

S. laciniatus non spinosus. *Bauh. Hist. v. 2.* 1016. *f.*

Smooth Jagged Sow-thistle. *Petiv. H. Brit. t. 14. f.* 9; also *f.* 10.

β. *Sonchus oleraceus.* *Fl. Dan. t.* 682.

S. n. 21 β. *Hall. Hist. v. 1.* 10.

S. lævis minor, paucioribus laciniis. *Raii Syn.* 163. *Bauh. Pin.* 124.

S. lævis latifolius. *Ger. Em.* 292. *f.* *Moris. sect. 7. t. 3. f.* 2.

Smooth Broad Sow-thistle. *Petiv. H. Brit. t. 14. f.* 8.

γ. *Sonchus n. 22 β.* *Hall. Hist. v. 1.* 10.

S. asper laciniatus. *Raii Syn.* 163.

S. aspera. *Matth. Valgr. v. 1.* 451. *f.* *Dalech. Hist.* 572. *f.*

S. asperior. *Ger. Em.* 291. *f.*

Prickly Jagged Sow-thistle. *Petiv. H. Brit. t. 14. f.* 5.

δ. *Sonchus n. 22 α.* *Hall. Hist. v. 1.* 10.

S. asper non laciniatus. *Raii Syn.* 163.

S. asper dentatus. *Dill. in Raii Syn.* 163. *n.* 9.

S. asper. *Ger. Em.* 291. *f.* *Dod. Pempt.* 643. *f.*

S. asper laciniatus latifolius. *Loes. Pruss.* 257. *t.* 77.

S. aspera. *Lob. Ic.* 234. *f.* *Fuchs. Hist.* 674. *f.*

S. tertius asperior. *Dod. Pempt.* 643. *f.* 3.

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Andryala major. *Dalech. Hist.* 563. *f.*

Broad Sow-thistle. *Petiv. H. Brit. t.* 14. *f.* 2.

Prickle-dented Sow-thistle. *Petiv. H. Brit. t.* 14. *f.* 4; copied from *Dod. Pempt.* 643. *f.* 3.

ε. *Sonchus subrotundo folio nostras, levissimis spinulis circa foliorum oras exasperatus.* *Pluk. Almag.* 354. *Phyt. t.* 61. *f.* 5. *Dill. in Raii Syn.* 163.

Round-leaved Sow-thistle. *Petiv. H. Brit. t.* 14. *f.* 1.

ζ. *Sonchus αφύλλοκαυλός, angusto et oblongo folio nostras, per foliorum ambitum creberrimis spinulis asperatus.* *Pluk. Almag.* 354. *Phyt. t.* 62. *f.* 4. *Dill. in Raii Syn.* 163.

Narrow Sow-thistle. *Petiv. H. Brit. t.* 14. *f.* 3.

In cultivated and waste ground every where.

Annual. *July—September.*

Root tapering, milky and bitter like the whole herb, which assumes a number of different but evanescent forms, insomuch that the several varieties, depending on richness or poverty of soil, can hardly be traced with any certainty. Ray doubted whether any of them were species or not. Hill persuaded Haller that the prickly varieties constituted a distinct species from the smooth ones; but this opinion is not confirmed by observation or experience. The *stem* in all, except very poor specimens, is branched, erect, round, smooth, hollow, leafy, very brittle. *Leaves* smooth on both sides, variously pinnatifid, or uncinatè, toothed, sometimes very prickly at the edges, the terminal lobe generally large and triangular; in ε and ζ, starved varieties, they are undivided. *Flower-stalks* cymose, axillary and terminal, clothed, more especially near the flowers, with a peculiarly soft, white, cottony web, which after a while falls off, leaving them smooth and naked. *Bracteas* few, lanceolate, partly toothed. *Cal.* smooth, glaucous. *Cor.* pale yellow, closing at night, and in bad weather; reported to be sometimes white, but this I have never seen. *Seeds* angular, furrowed and finely notched. *Down* copious, smooth, very white and silky.

Dr. Withering mentions a maritime variety without a *stem*, found on Portland island.

Hares and rabbits are very fond of this herb.

373. LACTUCA. Lettuce.

Linn. Gen. 400. *Juss.* 169. *Fl. Br.* 819. *Tourn. t.* 267. *Lam. t.* 649. *Gærtn. t.* 158.

Common Cal. cylindrical, of numerous, pointed, imbricated, unequal, flat scales, membranous at the margin. *Cor.* compound, imbricated, uniform; *florets* numerous, perfect, equal, ligulate, abrupt, with 4 or 5 teeth. *Filam.* capillary. *Anth.* in a cylindrical tube. *Germ.* obovate-oblong. *Style* thread-shaped, longer than the stamens.

Stigm. 2, revolute. *Seed-vessel* none, except the unaltered closed calyx. *Seed* obovate, furrowed, roughish, compressed. *Down* capillary, very slender, elevated on a stalk about its own length. *Recept.* narrow, naked, dotted.

Milky, fetid, bitter, upright, biennial or annual *herbs*, with solid, leafy *stems*. *Leaves* undivided or pinnatifid, sometimes toothed, or prickly. *Fl.* numerous, paniced, yellow, pale, and rather small. *L. perennis* has blue and rather large *flowers*, with deeply pinnatifid smooth *leaves*.

1. *L. virosa*. Strong-scented Lettuce.

Leaves horizontal, finely toothed; the keel prickly.

L. virosa. *Linn. Sp. Pl.* 1119. *Willd. v.* 3. 1526. *Fl. Br.* 819. *Engl. Bot. v.* 28. *t.* 1957. *Woodv. suppl. t.* 250. *Hook. Scot.* 227. *Ehrh. Pl. Off.* 137.

L. n. 15. *Hall. Hist. v.* 1. 7.

L. sylvestris major, odore opii. *Raii Syn.* 161. *Ger. Em.* 309. *f.*

L. sylvestris, opii odore, vehementer soporifero et viroso. *Moris. v.* 3. 58. *sect. 7. t.* 2. *f.* 16.

L. sylvestris, lato folio, succo viroso. *Bauh. Hist. v.* 2. 1002. *f.*

L. sylvestris vera. *Dalech. Hist.* 547. *f.* 2.

L. agrestis. *Cord. Hist.* 157. 2. *f.* *Lob. Ic.* 241. *f.*

Endivia. *Trag. Hist.* 268. *f.*

Thesion. *Dalech. Hist.* 564. *f.*

Broad, also Cut, Lettuce. *Petiv. H. Brit. t.* 15. *f.* 1, 2.

β. *Lactuca sylvestris*, folio non laciniato. *Raii Syn. ed.* 2. 70. *ed.* 3. 162.

L. sylvestris n. 2. *Ger. Em.* 309; *no f.*

About hedges, old walls, and the borders of fields, on a chalky soil, not uncommon.

Biennial. *August, September.*

Whole herb abounding with an acrid fetid milky juice, having the smell and narcotic properties of Opium. This juice springs out suddenly, in large drops, on the slightest touch, from the *calyx* and tender *leaves*, evincing a considerable degree of irritability in the plant. The *root* is tap-shaped. *Stem* solitary, 2 or 3 feet high, erect, round, smooth, sparingly leafy, scarcely branched; paniced at the top; a little prickly below. *Leaves* horizontal, nearly smooth, finely toothed; radical ones numerous, obovate, undivided, depressed; those of the stem smaller, often lobed; arrow-shaped and clasping at their base; the mid-rib of all more or less beset underneath with prominent prickles, such as often occur on the margin also. *Fl.* numerous, paniced, with abundance of small, heart-shaped, pointed *bracteas*. *Calyx-scales* downy at the tip, destitute of any keel or ribs. *Cor.* small, light yellow. *Seed-down* rough.

Respect for Ray and Gerarde may lead us to suppose our β differs in some degree from the plant in its ordinary state, with which Ray says it is found, though rarely. Its scent is reported to be milder. Gerarde cites the above synonyms of *Tragus* and *Dalechamp* for this variety; but neither their figures, nor Petiver's f. 1, indicate any thing but the most common appearance of the leaves, which are liable, on the same plant, to be wavy or slightly lobed; a difference which cannot be attended with any change of quality. Ray, and Dillenius who merely copies him, mention this variety as if it belonged to *L. Scariola*; but Gerarde certainly takes it for *L. virosa*. C. Bauhin confounds some of its synonyms with the following.

2. *L. Scariola*. Prickly Lettuce.

Leaves perpendicular, sinuated, finely toothed; the keel prickly.

L. Scariola. *Linn. Sp. Pl.* 1119. *Willd. v. 3.* 1526. *Fl. Br.* 820. *Engl. Bot. v. 4. t.* 268. *Fl. Dan. t.* 1227.

L. n. 14. *Hall. Hist. v.* 1. 7.

L. sylvestris, *costa spinosa*. *Bauh. Pin.* 123. *Raii Syn.* 161.

L. sylvestris laciniata. *Moris. v. 3.* 58. *sect. 7. t. 2. f.* 17.

L. sylvestris, *foliis dissectis*. *Ger. Em.* 309. f.

L. sylvestris. *Trag. Hist.* 259. f. *Fuchs. Hist.* 301. f. *Ic.* 172. f. *Matth. Valgr. v. 1.* 476. f. *Camer. Epit.* 300. f. *Dalech. Hist.* 547. f. 1.

L. sylvestris, sive *Endivia multis dicta*, *folio laciniato*, *dorso spinoso*. *Bauh. Hist. v. 2.* 1003. f.

Endivia major lactucina spinosa. *Barrel. Ic. t.* 135.

Jagged Lettuce. *Petiv. H. Brit. t.* 15. f. 3.

In waste ground, and dry stony borders of fields.

In several parts of the isle of Ely. *Relhan*. Sent by Rev. Mr. Hemsted from Denny abbey, between Cambridge and Ely. *Engl. Bot.*

Biennial. *August*.

Whole herb glaucous, milky, bitter, but less fetid than the preceding. *Stem* 2 or 3 feet high, erect, leafy, paniced. *Leaves* numerous, vertical, not horizontal, variously pinnatifid and toothed; their mid-rib furnished underneath with a close row of prominent prickles; their base clasping the stem. *Floral-leaves*, or *bracteas*, heart-shaped, entire. *Fl.* small, pale lemon-coloured, all their parts much like the last.

3. *L. saligna*. Least Lettuce.

Leaves linear; hastate or pinnatifid, entire, sessile; the keel prickly.

L. Saligna. *Linn. Sp. Pl.* 1119. *Willd. v. 3.* 1528. *Fl. Br.* 820.

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Engl. Bot. v. 10. t. 707. Dicks. H. Sicc. fasc. 17. 16. Jacq. Austr. t. 250.

L. n. 13. Hall. Hist. v. 1. 7.

L. sylvestris minima. Raii Syn. 162. Cant. 83.

L. sylvestris altera, angusto saligno folio, costâ albicante. Rupp. Jen. ed. Hall. 207. t. 4.

L. sylvestris annua, costâ spinosâ, folio angustissimo glauco. Morris. v. 3. 58. sect. 7. t. 6. f. 18.

Chondrilla viscosa humilis. Bauh. Pin. 130. Prodr. 68. f. Ger. Em. 287.

Endivia minor lactucina spinosa. Barrel. Ic. t. 136.

Small Jagged Lettuce. Petiv. H. Brit. t. 15. f. 4.

In chalky waste ground, or about salt marshes.

Near Cambridge. *Ray.* About Pancras church. *T. Willisel.* Behind the Small-pox hospital. *Sir J. Banks.* In shady lanes in Dorsetshire, but rare. *Dr. Pulteney.* At Southend, Essex. *Rev. R. B. Francis.* In marshes in Kent. *Dickson.*

Biennial. *August.*

Whole plant very slender. *Stem* 2 feet high, wavy, pale brown or whitish, somewhat branched, leafy throughout. *Leaves* glaucous, smooth except the mid-rib beneath, entire at the edges, sessile, very narrow, acute, clasping at the base; some linear; others hastate; a few of the largest deeply pinnatifid. *Fl.* in small alternate tufts composing long clusters. *Cal.* glaucous. *Cor.* very small, pale yellow, open in sunshine only, and soon fading. *Down* rough.

The mid-rib is occasionally smooth on both sides. In qualities this species most resembles the last.

374. PRENANTHES. Wall-lettuce.

Linn. Gen. 401. Juss. 168. Fl. Br. 821. Vaill. Mém. de l'Ac. des Sc. 717. f. 2. Gærtn. t. 158.

Common Cal. cylindrical, smooth, double; the innermost of as many linear, equal scales as there are florets; outer of a few very short unequal ones at the base. *Cor.* compound, of a simple row of perfect, equal, ligulate, abrupt, 4- or 5-toothed florets. *Filam.* capillary. *Anth.* in a slender cylindrical tube. *Germ.* oblong. *Style* capillary, prominent. *Stigm.* 2, revolute. *Seed-vessel* none, except the converging calyx. *Seed* obovate-oblong, furrowed or angular. *Down* capillary, roughish, nearly or quite sessile. *Recept.* naked, very narrow.

Annual or perennial, milky, smooth *herbs*, various in *foliage*, with upright paniced *stems*, and small yellow, purple, or white *flowers*.

1. *P. muralis*. Ivy-leaved Wall-lettuce.

Florets five. Leaves runcinate.

P. muralis. Linn. *Sp. Pl.* 1121. Willd. v. 3. 1543. Fl. Br. 821. Engl. Bot. v. 7. t. 457. Curt. Lond. fasc. 5. t. 58. Hook. Scot. 227. Fl. Dan. t. 509.

P. n. 18. Hall. Hist. v. 1. 9.

Lactuca sylvestris murorum flore luteo. Raii Syn. 162. Bauh. Hist. v. 2. 1004. f.

Sonchus lævis muralis. Ger. Em. 293. f.

S. lævior vulgaris secundus. Clus. Hist. v. 2. 146. f.

S. lævis laciniatus muralis, parvis floribus. Moris. v. 3. 61. sect. 7 t. 3. f. 14.

Ivy Lettuce. Petiv. H. Brit. t. 15. f. 5.

On old walls, or in woods on a chalky soil.

Perennial. July.

Root rather woody, with several long fibres. Herb slender and not inelegant, smooth in every part, tender and brittle, with a milky bitter juice. Stem a foot high, round, hollow, leafy, simple below. Leaves runcinate, toothed, clasping at the base; suddenly terminating in a large, ivy-like, toothed lobe; their under side more or less purple, like the leaves of a Cyclamen; radical ones stalked. Panicle much branched, and singularly divaricated in all directions. Bractees small, ovate, acute. Fl. erect, bright yellow, with a slender purplish calyx. Seed obovate, striated, black. Down raised on a short stalk as the seed ripens. The upper leaves are sometimes undivided.

375. LEONTODON. Dandelion.

Linn. Gen. 402. Fl. Br. 822. Gærtn. t. 158.

Taraxacum. Hall. Hist. v. 1. 23. Juss. 169. Lam. t. 653.

Dens Leonis. Tourn. t. 266.

Common Cal. oblong, double; innermost of several linear, equal, parallel scales; outer of fewer and shorter, lax or reflexed ones, at the base. Cor. compound, of very numerous, imbricated, equal, perfect, ligulate, abrupt, 5-toothed florets. Filam. capillary, short. Anth. in a cylindrical tube. Germ. obovate, furrowed. Style cylindrical, prominent. Stigm. 2, revolute. Seed-vessel none, the calyx converging, finally altogether reflexed. Seed obovate, furrowed, rough. Down capillary, radiating, on a long cylindrical stalk. Recept. naked, convex, dotted.

Stemless milky herbs, with radical runcinate leaves, and large yellow flowers, on simple, naked, hollow stalks. Aggregate down of the seeds forming a light globe, as in *Tragopogon*, soon dispersed by the wind.

1. *L. Taraxacum*. Common Dandelion.

Outer scales of the calyx reflexed. Leaves runcinate, toothed, smooth.

L. Taraxacum. *Linn. Sp. Pl.* 1122. *Willd. v.* 3. 1544. *Fl. Br.* 822. *Engl. Bot. v.* 8. t. 510. *Curt. Lond. fasc.* 1. t. 58. *Woodv. t.* 3. *Mill. Illustr. t.* 66. *Hook. Scot.* 227. *Fl. Dan. t.* 574. *Dreves Bilderb. t.* 4. *Bull. Fr. t.* 217. *Ehrh. Pl. Off.* 438.

L. officinalis. *With.* 679. *Hull* 173.

Taraxacum n. 56. *Hall. Hist. v.* 1. 23.

T. officinale. *Sibth.* 239.

Dens leonis. *Raii Syn.* 170. *Ger. Em.* 290. f. *Matth. Valgr. v.* 1. 461. f. *Camer. Epit.* 286. f.

D. leonis vulgi. *Lob. Ic.* 232. f. *Moris. v.* 3. 74. sect. 7. t. 8. f. 1.

Hieracium majus. *Trag. Hist.* 262. f.

Hedypnois. *Fuchs. Hist.* 680. f. *Ic.* 391. f. *Dalech. Hist.* 564. f. *Bauh. Hist. v.* 2. 1035. f.

H. Taraxacum. *Scop. Carn. v.* 2. 99.

Common Dandelion. *Petiv. H. Brit. t.* 11. f. 7.

β. *Dens leonis angustioribus foliis*. *Raii Syn.* 171.

Narrow Dandelion. *Petiv. H. Brit. t.* 11. f. 8.

In meadows, pastures, waste and cultivated ground, every where.

β. On dry grassy hills, or the tops of walls. At Matlock bath, Derbyshire.

Perennial. *April—July*.

Root tap-shaped, very milky, externally black, difficult of extirpation. Leaves numerous, spreading, of a bright shining green, quite smooth, tapering downwards, sessile, pinnatifid, with sharp, unequally toothed lobes, pointing downward, or, in botanical language, *runcinate*, of which these leaves are a perfect example. They may also be called lion-toothed. Flower-stalks one or more, rather longer than the leaves, erect, very smooth, brittle, quite naked. Fl. $1\frac{1}{2}$ inch wide, of a uniform golden yellow, expanded in the morning and in fine weather only. Outer scales of the calyx several, linear oblong, loosely recurved and wavy. As the seeds ripen, the inner calyx becomes reflexed close to the stalk, leaving the light globe, near 2 inches in diameter, formed by their radiating down, quite exposed till dispersed by the wind.

By culture, and especially by blanching, this herb, though, like the garden Lettuce and Endive, originally full of bitter milk, becomes sufficiently mild to be eaten in a salad, nor is its bitterness of a disagreeable kind. It is reported to be powerfully diuretic.

β is much smaller in every part than usual, the segments of the leaves being deep and very narrow, but the calyx-scales retain their due proportion and position. Some botanists appear to confound this variety with the following species, but the latter is naturally quite a bog plant; whereas the Common Dandelion

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becomes diminutive from drought and starvation only, retaining, in every state, the proper character of its *calyx*.

2. *L. palustris*. Marsh Dandelion.

Outer scales of the calyx shorter, imbricated, ovate. Leaves sinuated and toothed, not quite smooth.

L. palustre. *Lyons Fasc.* 48. *Fl. Br.* 823. *Engl. Bot.* v. 8. t. 553. *Relh.* 307. *Hook. Scot.* 227.

L. Taraxacon. *With.* 679. *Hull* 173.

L. Taraxacum δ . *Huds.* 339.

Hedypnois paludosa. *Scop. Carn.* v. 2. 100. t. 48.

In low boggy meadows.

On Hinton and Teversham moors, Cambridgeshire. *Relhan*. On the Lower Common at Heydon, Norfolk. *Rev. H. Bryant*. In several places about Edinburgh and Glasgow. *Hooker*.

Perennial. *June, July*.

Rather smaller than the general size of the foregoing, from which it is doubtless very distinct. The *leaves* are less runcinate than in any of its most starved varieties, and are frequently besprinkled, or fringed, with longish hairs; sometimes however they are quite smooth. *Outer calyx* constantly and essentially different from every variety of the last, consisting of ovate, pointed scales, regularly imbricated and erect, or close-pressed, the inner ones gradually longest, and full half the length of the inner calyx. In seed all the scales are reflexed, like the former. *Cor.* bright yellow; the external *florets* striated or stained underneath with red. Head of *seeds* about half as broad as that of *L. Taraxacum*.

The Rev. Mr. Hemsted has found this species undergo no change when propagated by seed.

Haller misquotes this plant under his *Picris* n. 26, which is *Aparigia hastilis*, *Leontodon hostile* of Linnæus.

376. APARGIA. Hawkbit.

Schreb. Gen. 527. *Sm. in Rees's Cycl.* v. 35, after *Thrincia*. *Prodr. Fl. Græc. Sibth.* v. 2. 130. *Comp. ed.* 4. 127.

Hedypnois. *Huds.* 340. *Fl. Br.* 823.

Leontodon. *Juss.* 170.

Thrincia. *Roth Catal.* v. 1. 97.

Taraxaconoides. *Vaill. Mém. de l'Ac. des Sc.* 700. f. 21.

Virea. *Gærtn. t.* 159.

Common Cal. double; the innermost oblong, imbricated, of several linear, parallel, unequal, incumbent scales; outermost very small, irregularly scattered. *Cor.* compound, of numerous, imbricated, uniform, perfect, ligulate, ab-

rupt, 5-toothed *florets*. *Filam.* capillary, very short. *Anth.* in a cylindrical tube. *Germ.* oblong. *Style* thread-shaped, prominent. *Stigm.* 2, recurved. *Seed-vessel* none, except the converging, finally spreading, calyx. *Seed* oblong, striated. *Down* sessile, feathery, rather chaffy at the base; often scaly or unequal in the marginal seeds; occasionally somewhat stalked in the central ones, frequently accompanied by shorter hairs or plumes. *Recept.* dotted, naked, or very slightly hairy.

Milky *herbs*, generally stemless, with single-flowered radical *stalks*. *Root* almost without exception perennial. *Leaves* variously toothed or sinuated, mostly hairy. *Fl.* of a full yellow, with a hairy or downy *calyx*.

1. *A. hispida*. Rough Hawkbit.

Stalks naked, single-flowered. Leaves runcinate, rough. Florets hairy at their orifice; glandular at the tip. Seeds scarcely beaked, all with feathery down.

A. hispida. *Willd. Sp. Pl.* v. 3. 1552. *Comp. ed.* 4. 120. *Cycl. n.* 11. *Hook. Scot.* 227.

Hedypnois *hispida*. *Fl. Br.* 823. *Engl. Bot.* v. 8. t. 554. *Relh.* 307.

Leontodon *hispidum*. *Linn. Sp. Pl.* 1124. *Curt. Lond. fasc.* 5. t. 56. *Fl. Dan.* t. 862.

Picris n. 25. *Hall. Hist.* v. 1. 11.

Dens leonis hirsutus leptocaulos, Hieracium dictus. *Raii Syn.* 171.

Hieracium caule aphylo hirsutum. *Bauh. Hist.* v. 2. 1037. *f.* 1038.

H. dentis leonis folio hirsutum. *Ger. Em.* 303. *f.*

H. foliis et floribus dentis leonis bulbosi. *Lob. Ic.* 238. *f.*

Common Rough Dandelion. *Petiv. H. Brit.* t. 11. *f.* 9.

In pastures, especially on chalk or limestone, plentifully.

Perennial. *July*.

Root tapering, long and slender, externally blackish. *Leaves* lanceolate-oblong, with reversed, nearly equal and regular, teeth; their base tapering and more entire. They are clothed on both sides with prominent hairs, generally forked, rarely simple or three-cleft. *Stalks* erect, taller than the leaves, simple, round, hollow, rough with similar hairs, without *bracteas*. *Fl.* drooping in the bud, erect when expanded, bright yellow, smaller than the Common Dandelion. *Cal.* ovate, hairy. *Florets* clothed with long, yellow, upright hairs, at the top of the tube externally, and bearing, at the back of each of their 5 teeth, a small triangular tuft of brown glands, first noticed by the late Mr. Sowerby. *Seeds* uniform, slender, slightly beaked. *Down* sessile, of numerous, feathery rays unequal in length. A report of the *seed-down* being stalked, arising from a mistaken reference of Haller to Berkhey's *Flores Compositi*, and propagated by Reichard and

Willdenow, as explained in Rees's *Cyclopædia*, has no foundation in truth.

The exotic *A. crispa*, which likewise has hairy *florets*, is most akin to this species; but the long tapering rough beak of its *seeds* affords a clear distinction. This beak is different from the proper stalk of a *seed-down*.

2. *A. hirta*. Deficient Hawkbit.

Stalks naked, single-flowered. Leaves toothed, rough. Calyx nearly smooth. Outer row of seeds crowned with scales only.

A. hirta. Hoffm. *Germ. for 1791*. 274. Sm. in Rees's *Cycl. n.* 12. *Comp. ed.* 4. 130. Hook. *Scot.* 228.

Thrinicia hirta. Roth *Catal. v.* 198. Willd. *Sp. Pl. v.* 3. 1554.

Hedypnois hirta. Fl. Br. 824. Engl. Bot. v. 8. t. 554. Relh. 307.

H. hispidum β. Huds. 340.

Leontodon hirtum. Linn. *Sp. Pl.* 1123. With. 682. Curt. *Lond. fasc.* 6. t. 59.

Rhagadiolus n. 7. Hall. *Hist. v.* 1. 5.

Hieracium pumilum saxatile asperum, præmorsâ radice. Raii *Syn.* 167.

H. dentis leonis folio, hirsutie asperum, minus. Bauh. *Prodr.* 63. f.

Sandy Rough Dandelion. Petiv. *H. Brit. t.* 11. f. 10.

On gravelly heaths and commons frequent.

Perennial. July, August.

Smaller than the last. Root abrupt, not tapering. Leaves often but slightly toothed, and not runcinate. Pubescence often simple, but on the whole not materially different from that of *A. hispida*. Fl. but half the size of that species, red underneath. Cal. almost entirely smooth. Florets destitute of hairs on the tube, as well as of glands under their tips; the inner ones with a less perfect *corolla* than the outer row. The seeds of the latter are crowned with a row of short, flat, toothed scales only, while those of the former bear sessile feathery down. These characters abundantly distinguish this long-doubtful species from the last, and the exotic *A. crispa* is known from both of them by the long beaks of its seeds, all bearing feathery down.

3. *A. Taraxaci*. Dandelion Hawkbit.

Stalks mostly single-flowered; tumid and hairy at the summit. Leaves smooth, runcinate. Calyx shaggy.

A. Taraxaci. Willd. *Sp. Pl. v.* 3. 1550. Sm. in Rees's *Cycl. n.* 8. *Comp. ed.* 4. 130. Hook. *Scot.* 228. Fl. Dan. t. 1523.

Hedypnois Taraxaci. Villars *Dauph. v.* 3. 80. t. 26. Fl. Br. 825. excl. Gouan's syn. Engl. Bot. v. 16. t. 1109.

H. autumnale ε. Huds. 341.

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Hieracium Taraxaci. *Linn. Sp. Pl.* 1125. *With.* 683. *Hull* 175. *Lightf.* 435. *Dicks. H. Sicc. fasc.* 17. 15. *Retz. Obs. fasc.* 4. 30. t. 2.

Picris n. 27. *Hall. Hist. v.* 1. 12.

P. Taraxaci. *Allion. Pedem. v.* 1. 211. t. 31. f. 1.

Dens leonis alpinus, foliis oblongis raro dentatis, calyce hispido nigrescente. *Segu. Veron. suppl.* 266.

On the Highland mountains of Scotland and Wales, in moist situations.

In the isle of Skye. *Lightf.* In Wales as well as Scotland. *Huds.*

On many of the Highland mountains. *Mr. J. Mackay.*

Perennial. *August.*

Root abrupt, blackish, with many long, simple, lateral fibres.

Leaves radical, smooth, erect, either lanceolate and almost linear, or spatulate and obovate; their teeth unequal, pointing backward; the base tapering. *Stalks* one or more, erect or ascending, from 3 to 6 inches high, swelling and very hairy at the top, mostly simple and single-flowered, but now and then divided. *Bractees* few or none, scattered, linear, smooth. *Cal.*

clothed with long, black or greyish, soft, shaggy hairs. *Cor.* bright yellow, twice the breadth of the calyx, the teeth (not *feet*, as is carelessly printed in the *Cyclop.*) of the *florets* brownish.

Seeds oblong, angular, rough. *Down* uniform, sessile, conspicuously feathery, so that the plant ought never to have been taken for a *Hieracium*, nor is there any reason to suppose it a mule, as Dr. Solander, by the only specimen he gathered in Lapland, in 1753, was induced to believe, and to persuade Linnaeus.

4. *A. autumnalis*. Autumnal Hawkbit.

Common stalk branched; partial ones scaly. Leaves lanceolate, toothed or pinnatifid, nearly smooth.

A. autumnalis. *Willd. Sp. Pl. v.* 3. 1550. *Sm. in Rees's Cycl. n.* 9. *Comp. ed.* 4. 130. *Hook. Scot.* 228.

Apargia. *Dalech. Hist.* 562. f.

Hedypnois autumnalis. *Huds.* 341. *Fl. Br.* 826. *Engl. Bot. v.* 12. t. 830. *Relh.* 308.

Leontodon autumnale. *Linn. Sp. Pl.* 1123. *With.* 680. *Hull* 173. *Sibth.* 238. *Abbot* 170.

Picris n. 28. *Hall. Hist. v.* 1. 12.

Hieracium minus, præmorsâ radice. *Raii Syn.* 164. *Bauh. Hist. v.* 2. 1031. f.

H. minus. *Fuchs. Hist.* 320. f. *Ic.* 183. f.

H. minus, sive leporinum. *Ger. Em.* 296. f.

H. chondrillæ folio glabro, radice succisâ, minus. *Bauh. Pin.* 128.

Lagopus. *Trag. Hist.* 265. f.

Common Hawkbit. *Petiv. H. Brit. t.* 12. f. 1.

β. Hieracium præmorsum laciniatum. *Dill. in Raii Syn.* 164.
Jagged Hawkbit. *Petiv. H. Brit. t.* 12. *f.* 2.

γ. Hieracium folio acuto minus. *Dill. in Raii Syn.* 164.
Small Jagged Hawkbit. *Petiv. H. Brit. t.* 12. *f.* 3.

δ. Hieracium folio obtuso minus. *Dill. in Raii Syn.* 164.
Dandelion Hawkbit. *Petiv. H. Brit. t.* 12. *f.* 4.

In meadows and pastures very common.

Perennial. *August.*

Root abrupt, with very long, simple, lateral fibres. *Leaves* several, almost entirely radical, lanceolate, deeply and unequally toothed, or pinnatifid; tapering at the base; often quite smooth; sometimes rough, with variously scattered hairs. *Stalks* several, ascending or spreading, branched, from 6 to 18 inches high, round, curved or wavy; naked in the lower part, but not quite smooth; the ultimate divisions, or partial stalks, scaly, with many scattered linear *bracteas*. Each stalk is hollow internally, containing a loose, white, cottony tuft, first noticed by the Rev. Mr. Holme, a most accurate and observing naturalist. *Cal.* slender, a little downy, as well as the top of the stalk. *Fl.* bright yellow, not large, often reddish underneath; once found in a proliferous state at the margin, by the late Rev. H. Bryant. *Seeds* slender, all crowned with sessile feathery *down*.

This plant has not been applied to any particular use, nor is it, though common, a very troublesome weed. It varies much in luxuriance, and is often found thriving in extremely poor land newly turned up.

The figure in *Fl. Dan. t.* 501 appears rather doubtful.

377. HIERACIUM. Hawkweed.

Linn. Gen. 402. *Juss.* 169. *Fl. Br.* 827. *Tourn. t.* 267. *Lam. t.* 652.
Gartn. t. 158.

Common Cal. ovate, imbricated, with numerous, linear scales, very unequal in length, spreading moderately when in seed, sometimes finally reflexed. *Cor.* compound, of numerous, imbricated, uniform, perfect, ligulate, linear, abrupt, 5-toothed *florets*. *Filam.* capillary, very short. *Anth.* in a cylindrical tube, much shorter than the floret. *Germ.* ovate. *Style* thread-shaped, a little prominent. *Stigm.* 2, recurved. *Seed-vessel* none, except the moderately spreading, or converging, rarely reflexed, permanent calyx. *Seed* ovate or oblong, angular, various in length, not beaked. *Down* sessile, copious, uniform, simple, often minutely rough. *Recept.* convex, naked, or nearly so, dotted, sometimes a little scaly.

A numerous perennial genus, generally inhabiting mountainous or woody situations. *Stem* erect, panicked, and

leafy; in some species wanting, the *flower-stalks* being radical and naked, bearing one or more *flowers*. *Leaves* simple, various in breadth; either undivided, entire, toothed, or pinnatifid; mostly rough or hairy; sometimes smooth. *Fl.* yellow, very seldom reddish. The herbage in general is milky, and more or less bitter, but these qualities are in some instances hardly perceptible.

* *Stalk radical, naked, single-flowered.*

1. *H. alpinum*. Alpine Single-flowered Hawkweed.

Leaves oblong, undivided, somewhat toothed. Stalk almost leafless, single-flowered. Calyx shaggy.

H. alpinum. *Linn. Sp. Pl.* 1124. *Willd. v.* 3. 1561. *Fl. Br.* 827. *Engl. Bot. v.* 16. *t.* 1110. *Lightf.* 434. *t.* 18. *Hook. Scot.* 228. *Allion. Pedem. v.* 1. 212. *t.* 14. *f.* 2.

H. n. 49. *Hall. Hist. v.* 1. 21.

H. villosum alpinum, flore magno singulari, caule nudo. *Dill. in Raii Syn.* 169. *t.* 6. *f.* 2.

H. villosum alpinum latifolium, magno flore. *Raii Syn. ed.* 2. 75, *excl. the reference to Clusius.*

H. alterum pumilum. *Column. Ecphr. v.* 2. 29. *t.* 30. *f.* 2. *Raii Hist. v.* 1. 241.

Welsh Mouse-ear. *Petiv. H. Brit. t.* 11. *f.* 2; copied, with purposed variation, from *Columna*.

On dry rocky mountains, in Wales and Scotland.

First observed by Mr. Lhwyd, on some of the loftiest rocks about Snowdon. *Ray*. On many of the Highland mountains. *Lightf. Hooker.*

Perennial. *July*.

Root blackish, rather woody. *Herb* clothed with prominent, hoary, rigid hairs, tawny at their base. *Leaves* almost entirely radical, a solitary one being only now and then elevated a little way up the stalk, all of them of a narrow obovate figure, tapering at the base, either quite entire, or slightly and distantly toothed, about 2 inches long, dark green and equally hairy on both sides. *Stalk* solitary, erect, bearing a large, bright yellow *flower*, whose *calyx* is black and very hairy. *Tube* of each *floret* externally hairy. *Seeds* minutely dotted, angular, reddish-brown. *Down* rough.

H. alpinum, *Ehrh. Herb.* 79, and especially his strongly and sharply toothed variety 89, with a divided *stalk*, have indeed the shaggy dark *calyx*, and hairy *florets*, of our plant, but they are far more gigantic than any specimens of British growth that I have seen. This *n.* 89 may perhaps be *H. Halleri*, *Hook. Scot.* 229, but it is not *H. villosum* of *Engl. Bot. t.* 2379, nor *H. pumilum* of *Willdenow*, both of which are caulescent.

2. *H. Pilosella*. Common Mouse-ear Hawkweed.

Leaves elliptical, entire; cottony beneath. Scions creeping. Stalks single-flowered, naked.

H. Pilosella. *Linn. Sp. Pl.* 1125. *Willd. v. 3.* 1563. *Fl. Br.* 828. *Engl. Bot. v. 16. t.* 1093. *Curt. Lond. fasc. 4. t.* 54. *Hook. Scot.* 229. *Dreves Bilderb. t.* 17. *Fl. Dan. t.* 1110. *Bull. Fr. t.* 279.

H. n. 55. *Hall. Hist. v. 1.* 23.

Pilosella. *Matth. Valgr. v. 2.* 316. *f. Camer. Epit.* 708. *f. Lob. Ic.* 479. *f.*

P. repens. *Raii Syn.* 170. *Ger. Em.* 638. *f.*

P. major. *Fuchs. Hist.* 605. *f. Dod. Pempt.* 67. *f. Dalech. Hist.* 1098. *f.*

Auricula muris minor. *Trag. Hist.* 278. *f.*

Common Mouse-ear. *Petiv. H. Brit. t.* 11. *f.* 1.

In dry open pastures, and on banks, park walls, cottage roofs, &c., common.

Perennial. *May—July.*

Root rather woody, throwing out many long, creeping, leafy scions.

Leaves spreading, elliptic-oblong, tapering at the base, entire; numerous at the root; smaller and alternate on the scions; their upper surface green and smooth, besprinkled with long coarse hairs, such as are found on every part of the herbage; their backs densely covered with white cottony pubescence. After drying these hairs become tawny. Stalks generally solitary, erect, a finger's length, round, downy and hairy, destitute of leaves and bracteas, each bearing a solitary flower, of a most elegant pale lemon-colour, with a red central stripe at the back of each floret. Cal. rough with black hairs, intermixed with white ones; its inner scales membranous. Seed-down rough with very minute teeth. The receptacle is clothed with short bristles, a slight deviation from the proper generic character, of which there are other examples.

Old authors esteem the *Pilosella* powerfully astringent, and assert it to be noxious, on that account, to sheep, while they recommend it for the cure of wounds, and of internal weaknesses. We might place some confidence in their prescriptions, if they did not at the same time declare that the juice of the herb, used for tempering steel, renders it capable of cutting stone and iron, such a property, as founded on the astringency of the herb, being purely hypothetical, if not evidently incredible.

** *Stalk radical, naked, many-flowered.*

3. *H. dubium*. Branching Mouse-ear Hawkweed.

Leaves elliptic-lanceolate, obtuse, nearly entire, besprinkled with coarse hairs; rather glaucous beneath. Scions

creeping, elongated. Stalk nearly smooth, loosely corymbose. Calyx bristly.

H. dubium. Linn. *Sp. Pl.* 1125. Willd. v. 3. 1563. Fl. Br. 828. Engl. Bot. v. 33. t. 2332. Tr. of Linn. Soc. v. 9. 226. Huds. 344. With. 684.

H. Auricula. Fl. Dan. t. 1111.

H. n. 53. Hall. Hist. v. 1. 22.

Pilosella major prima. Tabern. Kreuterb. 507. f. Ic. 196. f.

Pilosella. Tillands Ic. 14. f. bad; copied from Tabernæmontanus.

On mountains, in rather moist situations, rare.

On Fairfield mountain, near Rydall, Westmoreland. Huds. Brought from the north of England. Mr. Woodward. Sent from Scotland to the Cambridge garden. Mr. James Donn. Gathered in Scotland by Mr. G. Don. Hooker.

Perennial. July.

Larger than the last, but of a similar habit, though the herbage is far less hairy, and there is no cottony down about the plant, except a small quantity on the *flower-stalks*. The *leaves* are glaucous underneath, tapering, and fringed with coarse hairs, at the base. *Stalks* solitary, beset with scattered glandular hairs, and bearing 3 or 4 corymbose, or imperfectly umbellate, *flowers*, whose partial *stalks*, like the *calyx*, are downy, with short black glandular bristles interspersed. *Cor.* smaller than the preceding, lemon-coloured on both sides. *Seed-down* rough. There are several scattered, small, lanceolate *bracteas*, with membranous edges, about the partial *flower-stalks*.

†4. *H. Auricula.* Orange Mouse-ear Hawkweed.

Leaves lanceolate, acute, nearly entire, coarsely hairy; green on both sides. Scions scarcely so long as the leaves. Stalk downy and hairy, corymbose. Calyx shaggy.

H. Auricula. Linn. *Sp. Pl.* 1126. Willd. v. 3. 1564. Huds. 344? Fl. Br. 829. Engl. Bot. v. 33. t. 2368. Tr. of Linn. Soc. v. 9. 230. Comp. ed. 4. 131.

H. dubium. Fl. Dan. t. 1044.

H. n. 52. Hall. Hist. v. 1. 22?

In mountainous situations.

On Dalehead, not far from Grass-mere, Westmoreland, but sparingly. Hudson.

Perennial. July.

The most uncertain plant perhaps in our whole British catalogue, whose place in the *English Flora* depends on Mr. Hudson's authority alone, for no other person has met with any thing in Britain answering to his description, which is as follows.

“*Root* abrupt, with numerous simple *radicles*. *Scions* creeping,

leafy. *Stalk* radical, erect, naked, somewhat hairy, with scattered hairs, its height scarcely six inches. *Leaves* lanceolate, nearly entire, acute, naked. *Fl.* paniced, from 3 to 6, yellow. *Calyx-leaves* linear, hairy."

As Mr. Hudson knew, and has clearly described, *H. dubium*, we cannot but presume his *H. Auricula* to have been something different. He quotes Haller's *n.* 52, with synonyms of *Columna* and *C. Bauhin* copied from that author, but these do not agree so well with the Linnæan plant as the above description, which, except the "naked leaves," answers perfectly to the true *H. Auricula*, figured, from foreign dried specimens, in *Engl. Bot.* This cannot be mistaken if it should ever be met with in Britain. It is a native of very lofty mountains, near the glaciers of Switzerland and Savoy, and is most assuredly no variety of *H. dubium*. The *leaves* are green on both sides, more or less hairy, truly lanceolate and acute; the *scions* short; *flower-stalk* clothed with white down, intermixed with black glandular hairs; *partial stalks* more densely downy, with a few scattered, hairy, awl-shaped *bracteas*. *Cal.* more or less clothed with long, black and tawny, shaggy hairs. *Cor.* full yellow, inclining to orange.

5. *H. aurantiacum*. Orange Hawkweed.

Leaves elliptical, acute, entire. *Stalk* almost leafless, hairy, densely corymbose, many-flowered. *Calyx* shaggy.

H. aurantiacum. *Linn. Sp. Pl.* 1126. *Willd. v.* 3. 1569. *Comp. ed.* 4. 131. *Engl. Bot. v.* 21. *t.* 1469. *Don Herb. fasc.* 2. 41. *Hook. Scot.* 229. *Jacq. Austr. t.* 410.

H. n. 50. *Hall. Hist. v.* 1. 21.

H. germanicum primum F. Gregorii. *Column. Ecphr. v.* 2. 28. *t.* 30.

H. hortense latifolium, sive *Pilosella major*. *Ger. Em.* 305. *f.*

Pilosella polyclonos repens major syriaca, flore amplo aurantiaco. *Moris. v.* 3. 78. *sect.* 7. *t.* 8. *f.* 7.

P. major. *Park. Parad.* 300. *t.* 297. *f.* 5.

In rather mountainous woods.

In several woods in Banffshire, and at Craigston, in the neighbourhood of Turref. *Mr. G. Don*. Coalston woods, East Lothian; *Mr. Walker*; and woods to the east of Kenmore; *Mr. Maughan*. *Hooker*. At Failsworth, four miles north-east of Manchester, in great abundance. *Mr. John Bradbury*.

Perennial. *June, July*.

Root slightly creeping, with many long stout fibres, sending forth from its crown a few tufted leafy offsets, but no long trailing scions. *Leaves* 2 or 3 inches long, elliptical, acute at both ends, entire, except in very luxuriant specimens like the figure of *Jacquin*; rough with short hairs on both sides, especially the mid-rib; bright green above; slightly glaucous underneath; tapering at the base into a bordered footstalk. *Flower-stalk* cen-

tral, erect, round, very hairy, solid, often bearing a leaf or two near the bottom, sometimes a leafy *bractea* higher up, and terminating in a dense corymbose tuft of many deep orange-coloured *flowers*, not red enough in *Engl. Bot.*, neither are the hairs of the *calyx* sufficiently long and shaggy. *Partial stalks* cottony, with short black glandular hairs, and long tapering tawny ones, interspersed. *Recept.* slightly scaly. *Seeds* ovate, abrupt. Frequent in rustic gardens, thriving best in the shade, and called Grim the Collier, from the blackness of the *calyx* and *flower-stalks*.

*** *Stem leafy.*

6. *H. murorum*. Broad-leaved Wall Hawkweed.

Stem corymbose, with a solitary leaf. Leaves ovate-heart-shaped, wavy, with radiating teeth chiefly at the base.

H. murorum. *Linn. Sp. Pl.* 1128. *Willd. v. 3.* 1577. *Comp. ed.* 4. 131. *Tr. of Linn. Soc. v. 9.* 236. *Engl. Bot. v. 29. t.* 2082. *Hook Scot.* 230, α . *Fl. Br.* 830, β .

H. n. 46, α . *Hall. Hist. v. 1.* 19.

H. macrocaulon hirsutum, folio rotundiore. Raii Syn. 169.

H. murorum folio pilosissimo. Bauh. Pin. 129. *Moris, sect. 7. t.* 54; *letter-press confused.*

Auricula muris major. Trag. Hist. 276. *f.*

Pulmonaria gallica, sive aurea. Tabernæm. Ic. 194. *f. good.*

P. gallica mas. Tabernæm. Kreuterb. 504. *same f.*

P. gallica, sive aurea latifolia. Ger. Em. 304. *f.*

P. gallorum, sive Auricula muris major Tragi. Dalech. Hist. 1328. *f.*

Corchorus. Dalech. Hist. 565. *same f.*

Pilosella major quibusdam, &c. Bauh. Hist. v. 2. 1033. *f, copied from Gerarde.*

Round Hawklung. *Petiv. H. Brit. t. 13. f.* 2.

β . *H. murorum* β . *Linn. Sp. Pl.* 1128.

H. n. 46, β . *Hall. Hist. v. 1.* 20.

H. murorum laciniatum, minus pilosum. Bauh. Pin. 129.

Pulmonaria gallica foemina. Tabernæm. Ic. 195. *f. Kreuterb.* 504. *f.*

Pilosellæ majoris, sive Pulmonariæ luteæ, species magis laciniata. Bauh. Hist. v. 2. 1034. *f.*

Broad dented Hawklung. *Petiv. H. Brit. t. 13. f.* 3.

On rocks and old walls.

In Edinburgh park; Mr. Newton; near Buckbarrow well in Long Sledale, Westmoreland; Mr. Lawson. *Ray.* On Chedder cliffs, Somersetshire. *Mr. E. Forster.* On the walls of the castle at Castleton, Derbyshire. *Mr. D. Turner.*

Perennial. *June.*

Root somewhat woody, with long simple stout fibres, destitute of scions or runners. *Stems* one or more, erect, 12 or 18 inches high, round, slightly hairy, furrowed, internally spongy, but

hollow in the centre, seldom quite leafless, branched in a corymbose manner, and bearing from 4 to 6 large yellow *flowers*, on glandular and hairy blackish *stalks*. *Bracteas* few, scattered, awl-shaped or linear, hairy. *Leaves* on long hairy *footstalks*, broadly ovate, somewhat heart-shaped, variously hairy, wavy, more or less toothed about the base, their teeth radiant, or spreading every way, the lowermost pointing backward, and in β remarkably elongated or dilated; the upper surface of an elegant, opaque, rather glaucous green; under paler, often purplish, but the leaves are never stained with black; they are numerous, and for the most part radical, one only, much toothed, being situated about the middle of the stem, sometimes lower down. *Cal.* rough with short, black, glandular hairs. *Recept.* convex, toothed.

The *stem* in this species is not more copiously leafy than in some, native or exotic ones, of the former section, but with them it has no natural affinity, and is therefore placed with those to which it is most nearly allied.

7. *H. maculatum*. Stained-leaved Hawkweed.

Stem cymose, many leaved, tubular. Leaves ovate-leanceolate, strongly toothed; teeth pointing forward.

H. maculatum. *Comp. ed.* 4. 131. *Engl. Bot.* v. 30. t. 2121.

H. sylvaticum. *Fl. Dan.* t. 1113.

H. sylvaticum β . *Tr. of Linn. Soc.* v. 9. 240, erasing the *syn.* of *Ray*, *Dillenius* and *Villars*.

H. sylvaticum γ and perhaps δ . *Hook. Scot.* 231.

H. murorum γ . *Fl. Br.* 830.

H. Pulmonaria dictum angustifolium. *Richardson and Dill. in Raii Syn.* 168; but not the original plant of *Ray*, *Gerarde*, and *Lobel*, which *Dr. Lamb* of *Newbury* proved to be *Cineraria integrifolia*; and this remarkable fact the old figure of the two last-mentioned authors, copied by *Petiver*, t. 13. f. 5, confirms. Yet *Lobel's* figure, *Ic.* 587. f. 1, is still quoted by some authors for *H. sylvaticum*.

On the mountains of *Wales*, *Westmoreland*, and *Scotland*.

Near the lake *Lhyn y cwm*, not far from the church of *Llanberis*, *North Wales*. *Dr. Richardson*, according to his herbarium. On *Breidden hill*, *Montgomeryshire*. *Mr. Bowman*. Brought from *Westmoreland*, in 1781, by *Mr. Crowe*, in the site of whose garden at *Norwich*, and that neighbourhood, the plant is now naturalized, as well as on several old walls about the cathedral.

Perennial. *June—September*.

The great difficulty of the subject, and the many errors of the most able botanists, will I hope plead my excuse for having at any time confounded this very distinct species with the preceding or the following. Though variable in height, from 1 foot, as in *Mr. Bowman's* specimen, to 2 or 3 on our walls, it has always a

taller, more erect and straight *stem* than the last, bearing several scattered, nearly sessile *leaves*, and more amply and decidedly hollow. The hairy *leaves* are longer, ovate-lanceolate, not at all heart-shaped, but rather tapering at the base; their usually strong, deep, distinct teeth all pointing forward, not backward; their colour dark green above, more or less speckled with black, or dark purple; the under side paler; radical ones on long hairy *footstalks*. The *flower-stalks* are numerous, clothed, like the *calyx*, with short, dense, rather cottony, down, intermixed with short, black, glandular bristles, and they form an irregular, sometimes compound, cymose *panicle*, bearing several scattered, linear, hairy *bracteas*. *Fl.* about an inch wide, of a full bright yellow. *Seeds* slender, angular. *Recept.* slightly scaly, or cellular.

8. *H. sylvaticum*. Wood Hawkweed.

Stem simply racemose, many-leaved, solid. Leaves ovate-lanceolate, toothed chiefly about the base; teeth pointing forward.

H. sylvaticum. *Sm. Tr. of Linn. Soc. v. 9. 239, α. Comp. ed. 4. 131. Engl. Bot. v. 29. t. 2031. With. 687. Hook. Scot. 231, α. Gouan Illustr. 56. Willd. Sp. Pl. v. 3. 1578.*

H. murorum. *Ehrh. Herb. 147. Fl. Br. 830, α.*

H. n. 46, δ. Hall. Hist. v. 1. 20.

H. murorum, folio pilosissimo. Raii Syn. ed. 2. 74. ed. 3, 168.

Pulmonaria gallica tenuifolia. Tabernæm. Ic. 195. f. Kreuterb. 505. f.

Pilosellæ majoris, sive Pulmonariæ luteæ species angustifolia. Bauh. Hist. v. 2. 1034. f.

French Hawkklung. *Petiv. H. Brit. t. 13. f. 4.*

In dry chalky woods, and on dry banks, or especially old park walls, frequent.

Perennial. *June, July.*

Root slender, slightly creeping, with long, rather stout, fibres. *Herb* hairy, of a pale, unspotted, grass green. *Stem* erect, 12 or 18 inches high, striated or slightly angular, very nearly, if not quite, solid throughout, leafy, paniced at the top in a regular, alternate, or racemose, manner. *Radical* and lower *stem-leaves* on long hairy stalks; upper nearly sessile; all ovate-lanceolate, or oblong, acute, most toothed about their lower half, the teeth various in size, all pointing forward or outward, not backward. *Fl.* smaller than the last, and much fewer, often but 2 or 3 in the *panicle*, always simply racemose, not cymose; their colour bright yellow. *Flower-stalks* and *calyx* rough with short black hairs, and sometimes a little cottony. *Recept.* roughish or minutely scaly.

The name of *H. murorum* so well agrees with this common species,

that it was taken for that plant, without much examination, in the *Fl. Brit.*, and I am obliged to Mr. E. Forster for leading me to study this and some of the neighbouring species, whence I trust they have been better explained in the *Linnæan Transactions*, though in the present work I have found further corrections requisite.

9. *H. pulmonarium*. Lungwort Hawkweed.

Stem somewhat corymbose, solid, slightly leafy. Leaves lanceolate, deeply and unequally toothed throughout; teeth pointing forward.

H. pulmonarium. *Comp. ed.* 4. 131. *Engl. Bot.* v. 33. t. 2307.

H. pulmonarioides. *Villars Dauph.* v. 3. 133. t. 34; from the author.

On rocks about rivers in Scotland, as in Dauphiny.

On the banks of the river Nivis, near the bridge. *Mr. Borrer*.

Perennial. *July*.

Root woody. *Stem* not much above a foot high, round, striated, full of pith, bearing 2 or 3 leaves only, which are nearly sessile.

Radical leaves several, on bordered *footstalks*, erect, elliptic-lanceolate, acute, bright green, rough with rather short hairs, and clouded with faint blotches of purplish brown; their teeth numerous and unequal, largest and most abundant about the lower half of each leaf, and generally wanting toward the extremity, all directed forward, each having a small incurved point. *Panicle* of from 2 to 6 *flowers*, truly corymbose, the first partial stalk remaining always much lower than the rest, all of them rough with black glandular hairs, as is likewise the *calyx*.

Cor. bright yellow, broader than the last. *Seeds* slender, angular.

I have Highland specimens, from the late Mr. G. Don, and Mr. J. Mackay, of what seems to be a broader-leaved, and more strongly toothed, variety of the present species.

10. *H. Lawsoni*. Glaucous Hairy Hawkweed.

Stem remotely and simply branched, solid, slightly leafy.

Radical leaves stalked, elliptic-lanceolate, decurrent, glaucous, fringed, nearly entire.

H. Lawsoni. *Villars Dauph.* v. 3. 118. t. 29. *Willd. Sp. Pl.* v. 3. 1569. *Comp. ed.* 4. 131. *Engl. Bot.* v. 29. t. 2083. *Tr. of Linn. Soc.* v. 9. 241.

H. leptocaulon hirsutum, folio longiore. *Raii Syn. ed.* 2. 74. *ed.* 3. 169.

H. glaucum pilosum, foliis parùm dentatis. *Dill. Elth.* 180. t. 149.

On the mountains of Westmoreland, Craven, and Scotland.

Upon rocks by the rivulet between Shap and Anna well, West-

moreland. *Mr. Lawson.* On rocks by the Maze beck, and at Maze beck scar, Westmoreland. *Mr. W. Robertson,* from whom I have a wild specimen. On the sloping side of a hill called Gordill, near Malham in Craven. *Dr. Richardson.* At the foot of the Highland mountain Ben Cruachan, and on a rock in Corrie Cruachan. *Dr. Hooker and Mr. Borrer.*

Perennial. July.

Root rather woody, black externally, with long simple fibres. *Herb* glaucous, abounding in every part with bitter milk. *Stems* one or more, filled with pith, erect or spreading, a foot high, in cultivated specimens twice as much, round, smooth, bearing one, two, or three sessile oblong *leaves*, and terminating in from one to four bristly and downy, slightly bracteated, alternate, elongated *flower-stalks*, each supporting a very large and handsome lemon-coloured *flower*, whose calyx is clothed with short, tawny, as well as blackish, hairs. The *leaves* are chiefly radical, on long dilated *footstalks*, elliptical, acute at each end, much extended at the base, where they are copiously hairy; their margins generally quite entire, fringed with pale hairs.

This is a most distinct species, propagating itself plentifully by seed in a garden, where it differs only in luxuriancy from a Pyrenean specimen in my possession, the only wild one I have ever seen. The figure in *Engl. Bot.* was of necessity taken, like that of Dillenius, from a cultivated plant, but it is very characteristic.

11. *H. paludosum.* Marsh Succory-leaved Hawkweed.

Stem angular, tubular, leafy, smooth, corymbose. *Leaves* smooth, toothed, clasping the stem with their heart-shaped base. *Calyx* hairy.

H. paludosum. *Linn. Sp. Pl.* 1129. *Willd. v. 3.* 1579. *Fl. Br.* 831. *Engl. Bot. v. 16. t.* 1094. *Hook. Scot.* 232. *Fl. Dan. t.* 928. *Allion. Pedem. v. 1.* 216. *t. 28. f. 2. and t. 31. f. 2.* *Villars Dauph. v. 3.* 129.

H. n. 45. *Hall. Hist. v. 1.* 19.

H. montanum, cichorei folio nostras. *Raii Syn.* 166.

H. montanum latifolium minus. *Ger. Em.* 300. *f.*

H. Britannicum. *Clus. Pann.* 643.

H. latifolium glabrum ex valle Griesbachianâ. *Bauh. Hist. v. 2.* 1033. *f.*

In watery shady places in Wales, the north of England, and lowlands of Scotland.

Abundant in moist meadows, and about mountain rivulets, in Craven. *Dr. Richardson.* Plentiful in Westmoreland; as well as near Moffat and elsewhere in Scotland.

Perennial. July.

Root fibrous. *Herbage* quite smooth, of a full deep shining green,

intensely bitter. *Stem* erect, angular, hollow, leafy, about 2 feet high, unbranched, but terminating in a corymbose *panicle* of several bright yellow *flowers*, scarcely an inch in diameter; their *stalks* smooth. *Calyx* rough with black prominent hairs, particularly at its base. *Leaves* elliptic-oblong, taper-pointed, copiously toothed, the lower teeth often hooked backward; the base elongated, dilated, and clasping the stem; radical ones few, somewhat stalked. It is one of our best-defined species.

12. *H. molle*. Soft-leaved Hawkweed.

Stem angular, tubular, leafy, downy, corymbose. *Leaves* lanceolate, slightly toothed, hairy, clasping the stem; lower ones stalked, elliptical and obtuse.

H. molle. *Jacq. Austr. v. 2. 12. t. 119*; from the author. *Willd. Sp. Pl. v. 3. 1577. Dicks. Tr. of Linn. Soc. v. 2. 288. H. Sicc. fasc. 11. 13. Fl. Br. 832. Engl. Bot. v. 31. t. 2210. With. 688. Hook. Scot. 232*; excluding the synonym.

In woods in the south of Scotland. *Dickson.*

Among bushes in meadows, to the north of Forfar; Mr. G. Don; and by the lower fall of the Tummel, Glen Luss; Mr. Borrer. *Hooker.*

Perennial. *July, August.*

Root abrupt, with many long fibres. Whole *herb* clothed with scattered, short, soft, simple hairs, which on the angular *flower-stalks* are glandular and viscid. *Stem* 12 or 18 inches high, erect, leafy, angular, perfectly tubular and hollow, unbranched except at the summit. *Radical leaves* elliptic-oblong, obtuse, very obscurely and minutely toothed, often quite entire; paler beneath; tapering at the base into long, narrow, bordered *foot-stalks*; *upper ones* several, sessile, clasping the stem, more lanceolate and less blunt. *Panicle* corymbose. *Fl.* not numerous, about an inch broad, of a full golden yellow. *Cal.* clothed with short, brownish, spreading, scarcely glandular hairs, intermixed with a little cottony down. *Seeds* light brown, furrowed. *Down* rough.

Mr. Davall found this species in Switzerland, but he did not, like Willdenow, confound it with Haller's *n. 47*, Willdenow's *integri-folium*, under which this author also quotes Haller's 47. The latter is a most distinct species, perfectly smooth, glaucous, well compared by Haller to a *Bupleurum*, and resembling also some of the smooth species of *Solidago*. The *leaves* are lanceolate; those of the stem numerous, narrow, taper-pointed, quite entire, sessile, hardly clasping. *Stem* round, strongly furrowed, perfectly solid, not tubular, a character too much overlooked by authors who have attempted to discriminate the species of *Hieracium*. The *flowers* are nearly twice the size of *H. molle*. *Calyx*

very slightly hairy, cottony at the base, like the summit of each flower-stalk. The panicle is otherwise smooth, not bristly nor glandular, and bears several diminished leaves, resembling those of the stem, but much smaller. Willdenow's definition and description of this plant but ill accord with my Swiss specimens. There seems no reason to suppose it a native of Britain, but I subjoin its character and synonyms. The name taken from Vaillant, is not apposite.

H. succisæfolium. Stem solid, furrowed, leafy, corymbose, smooth, like the lanceolate, taper-pointed, entire leaves. Calyx, and top of the flower-stalks, somewhat downy.

H. succisæfolium. Allion. *Pedem. v. 1.* 205, without character, figure, or description. *DeCand. Fr. v. 4.* 28. *H. integrifolium*. Willd. *v. 3.* 1568. *H. n. 47.* Hall. *Hist. v. 1.* 20. *H. glabrum*, *Succisæ folio, prorsus integro.* Vaill. *Mém. de l'Ac. des Sc.* 710. *n. 40.* Le Monnier *Obs.* 157.

13. *H. cerinthoides*. Honeywort-leaved Hawkweed.

Stem solid, leafy, corymbose, somewhat angular. Leaves hairy, slightly toothed; the uppermost ovate, pointed, clasping; radical ones elliptic-oblong, with shaggy fringed footstalks.

H. cerinthoides. Linn *Sp. Pl.* 1129. Willd. *v. 3.* 1580. Sm. *Tr. of Linn. Soc. v. 9.* 242. *Comp. ed. 4.* 131. *Engl. Bot. v. 34.* t. 2378. Hook. *Scot.* 232. Gouan *Illustr.* 58. t. 22. f. 4. Villars *Dauph. v. 3.* 110. t. 32 ?

H. pyrenaicum, folio cerinthes, latifolium, et angustifolium. Schola *Bot.* 189. Vaill. *Mém. de l'Ac. des Sc.* 707. *n. 16, 17.* Tourn. *Inst.* 472.

On rocks in the Highlands of Scotland, not uncommon. Mr. G. Don.

Perennial. August.

Root somewhat woody, blackish. Herb rather glaucous. Stem $1\frac{1}{2}$ or 2 feet high, erect, stout, cylindrical, with several slight angles, smooth, or nearly so, quite solid, corymbose, leafy. Radical leaves on long, flat, very shaggy footstalks, elliptic-oblong, or obovate, from 3 to 5 inches in length, acute, sometimes obtuse, either nearly entire, or beset with small distant teeth, the surface besprinkled with dots, a little like those of *Cerithe*, but these are often very slight, and the long hairs which accompany them are variable in quantity; stem-leaves sessile, ovate, entire, taper-pointed, fringed, gradually diminished to copious leafy bractees on the rough stalks of the panicle. Fl. rather large, pale yellow, on bristly glandular stalks. Cal. covered with shaggy, but short, hairs. Seeds furrowed, dark brown. Down minutely rough.

Our plant is certainly that of Linnæus, and apparently of DeCandolle. It accords well with Gouan's plate, but not with that of Villars, nor with specimens from Dauphiny, which yet may possibly be but varieties of the same species.

14. *H. villosum*. Shaggy Alpine Hawkweed.

Stem tubular, leafy, shaggy, with very few flowers. Leaves oblong, wavy, unequally toothed, shaggy as well as the calyx. Seeds angular.

H. villosum. Linn. *Sp. Pl.* 1130. Willd. *v.* 3. 1585. *Fl. Br.* 833. *Engl. Bot.* *v.* 34. *t.* 2379; not good. Dicks. *Tr. of. Linn. Soc.* *v.* 2. 288. Jacq. *Austr. t.* 87.

H. n. 44. Hall. *Hist.* *v.* 1. 18.

H. n. 971. Hall. *Enum. Rar.* 54.

H. alpinum hirsuto folio quintum. Clus. *Pann.* 643. *f.* 644. *Hist.* *v.* 2. 111. *f.* 112. Bauh. *Hist.* *v.* 2. 1027. *f.*

H. quintum Clusii. Ger. *Em.* 301. *f.*

H. alpinum, latiore folio, pilosum, flore majore. Pluk. *Almag.* 184. *Phyt. t.* 194. *f.* 2.

H. alpinum latifolium villosum, magno flore. Bauh. *Pin.* 128. *Moris.* *v.* 3. 70. *n.* 62. *sect.* 7. *t.* 5. *f.* 58.

Welch Hoary Hawkklung. *Petiv. H. Brit. t.* 13. *f.* 6; copied from the figure of Clusius, which, through the mistake of Ray, was applied to *H. alpinum*.

On moist alpine rocks.

On Ben Nevis. Mr. Dickson. Ben Lawers, and other Scottish mountains. Mr. J. Mackay. On rocks near Loch Callater, north of Clova. Mr. T. Drummond. A wild specimen of Mr. Drummond's, for which I am obliged to Mr. W. Robertson of Newcastle, answers sufficiently well to *Engl. Bot. t.* 2379, and is undoubtedly the *H. villosum* of Linnæus and Jacquin. The stem is 15 inches high, leafy; branched in the upper part, bearing 5 large, lemon-coloured flowers, with several scattered, ovate, pointed bractæas; the whole of the herbage extremely hairy, or shaggy. It agrees precisely with specimens from Jacquin, and with Swiss ones of Haller's *n.* 44; the number of flowers varying from 1 to 5. Near Meer Gill, at the foot of Ingleborough, Yorkshire; Mr. Caley. *Withering*.

Perennial. August.

Root woody, with several fibres. Stem upright, a foot or more in height, round, striated, hollow, leafy, unbranched, often quite simple and single-flowered, but not unfrequently divided at the summit, and bearing 2 or more flowers which are very large, near 2 inches wide when fully expanded, lemon-coloured. Leaves elliptic-oblong, acute, wavy, with shallow unequal teeth, a little glaucous, and, like the stem and calyx, remarkable for their

clothing of long, shaggy, hoary hairs, which become tawny by keeping. These copious long hairs, and the large lemon-coloured *flowers*, distinguish this species from every other of British growth. The *seeds* are chesnut-coloured, more angular than striated, with a very smooth surface. *Down* rough, rather short.

The figure in *Engl. Bot.* taken from an ill-chosen garden specimen, is so unlike the wild plant, that I cannot wonder if Dr. Hooker thought it a different species. Our *H. villosum* has, however, little affinity to *H. Halleri* of Villars, named *hybridum* in his *t.* 26; (*DeCand. Fr. v.* 4. 19. *Willd. v.* 3. 1587,) and still less to *H. alpinum*. This plant of Villars is, moreover, *pumilum* of Willd. *v.* 3. 1562, under which name Mr. Sieber sent specimens from Styria. It does not clearly appear from the *Fl. Scot.* whether this or *villosum* was gathered on Ben-y-more.

15. *H. Halleri*. Hallerian Dwarf Hawkweed.

Stem erect, with one or two flowers, slightly leafy. Leaves hairy; lower ones obovate-oblong, stalked, toothed; upper lanceolate, much diminished. Calyx shaggy.

H. Halleri. Villars *Dauph. v.* 3. 104. *t.* 26, *hybridum*. Willd. *Sp. Pl. v.* 3. 1587. Hook. *Scot.* 229; omitting the reference to *Engl. Bot.*

H. pumilum. Willd. *v.* 3. 1562. Mr. Sieber.

In the Highlands of Scotland.

On the Clova mountains. Mr. Thomas Drummond.

Perennial. July, August.

For a wild specimen of this I am also obliged to Mr. Robertson.

It agrees precisely with others sent from Styria, by Mr. Sieber, and clears up every difficulty respecting this species and *H. villosum*, from which, as well as from *H. alpinum*, it is certainly distinct; though perhaps the latter is equally entitled to be reckoned caulescent. The radical *leaves* of *H. Halleri* are much fewer than in *alpinum*, less coarsely toothed, and one resembling them is sometimes placed about an inch up the *stem*; one or two still higher being very small, lanceolate, acute, and nearly sessile. *Stem* usually simple and single-flowered, rarely 2- or 3-flowered, not shaggy, but rough with short, black, prominent bristles. *Cal.* dark, clothed with some pale hairs, but by no means shaggy like *H. alpinum*. The *florets* however are externally hairy, about the summit of the tube, as in that species. The whole *flower* is of a full golden yellow, not lemon-coloured like *villosum*; nor is the *stem* hollow as in that, but full of light pith, exactly in the manner of *H. alpinum*.

16. *H. sabaudum*. Shrubby Broad-leaved Hawkweed.

Stem erect, copiously leafy, many-flowered. Leaves ovate-lanceolate, sharply toothed, rough-edged, somewhat clasping; hairy beneath.

H. sabaudum. *Linn. Sp. Pl.* 1131. *Fl. Suec.* 274. *Willd. v.* 3. 1589. *Fl. Br.* 834. *Engl. Bot. v.* 5. *t.* 349. *Hook. Scot.* 233. *Fl. Dan. t.* 872. *Allion. Pedem. v.* 1. 218. *t.* 27. *f.* 2. *Bauh. Hist. v.* 2. 1030. *f.* 2.

H. n. 35. *Hall. Hist. v.* 1. 15.

H. n. 30. *Gmel. Sib. v.* 2. 35. *t.* 14.

H. fruticosum latifolium hirsutum. *Bauh. Pin.* 129. *Raii Syn.* 167.

Broad Hairy Hawklung; also Narrow Hairy Hawklung. *Petiv. H. Brit. t.* 13. *f.* 7, 8.

β . *Hieracium fruticosum latifolium glabrum*. *Raii Syn.* 168.

Broad Smooth Hawklung. *Petiv. H. Brit. t.* 13. *f.* 9.

γ . *Hieracii seu Pilosellæ majoris species humilis, foliis longioribus rariùs dentatis plurimis simul, flore singulari, nostras*. *Raii Syn. ed.* 2. 75. *ed.* 3. 170. *Pluk. Almag.* 183. *Phyt. t.* 37. *f.* 3.

Plukenet's Mouse-ear. *Petiv. H. Brit. t.* 11. *f.* 6.

In coppices, groves and thickets, frequent.

β . Near Ulswater, Westmoreland. *Ray*.

Perennial. *August, September*.

This species, in its usual state, is very distinct, and readily known.

The stems, though annual, have a shrubby aspect, and are far more abundantly leafy than any of the preceding. They are 2 or 3 feet, or more, in height, erect, wand-like, stout, roundish, furrowed, obscurely angular, rough to the touch, nearly filled with pith, though somewhat tubular in the upper part, which is branched and paniced; the lower most hairy. Leaves alternate, almost or quite sessile, and partly clasping the stem, $1\frac{1}{2}$ or 2 inches long, ovate or lanceolate, pointed, rough-edged, sharply and regularly toothed; dark green and almost smooth above; paler, somewhat glaucous, and hairy or rough, beneath; the lower ones elliptical, lengthened out at their base. Fl. numerous, full yellow, open in the forenoon only, like most of this tribe, on corymbose, hairy or downy, stalks, forming a variously compound, often cymose, panicle, accompanied by many small, ovate, leafy bracteas. Cal. brownish, downy and hairy, the outer scales lax. Anth. greenish. Stigma beset with blackish hairs. Seed angular and roughish, dark chesnut coloured. Down rough. Recept. a little cellular, and hairy. Whole herb milky.

With the varieties above indicated I am not well acquainted. A north-country plant from Mr. E. Forster, which remains unaltered by culture, seems to answer to the β ; but of this I have no certain evidence, nor can I clearly define it as a species. It is smoother, and of more humble stature, than our common

sabaudum, of which there is in Switzerland a smooth as well as a rough variety.

17. *H. denticulatum*. Small-toothed Hawkweed.

Stem erect, leafy, solid, many-flowered, cymose, with downy glandular stalks. Leaves sessile, elliptic-lanceolate, finely toothed, smoothish; glaucous beneath.

H. denticulatum. *Engl. Bot.* v. 30. t. 2122. *Comp. ed.* 4. 132. *Hook. Scot.* 231.

H. prenanthoides. *Fl. Br.* 835.; excl. all the synonyms, except *H. Kalmii*. *Sym.* 173.

In woods in the south of Scotland.

About Loch Rannach, Perthshire. *Mr. G. Don and Mr. J. Mackay.*

In Harehead wood, near Selkirk. *Mr. Dickson.*

Perennial. *July, August.*

Stem a yard high, much more slender than the last, upright, round, striated, roughish to the touch, nearly or quite filled with pith, leafy from top to bottom. *Leaves* twice the size of the preceding, much thinner and more pliant, sessile, but scarcely at all clasping; minutely toothed at the edges, and somewhat wavy; glaucous beneath, with a hairy mid-rib, and often sparingly besprinkled on both sides with short hairs; the edges smooth, or not rougher than any other part. *Fl.* bright yellow, not an inch broad in a cymose *panicle*, whose branches are downy, and partly glandular. *Bracteas* few and small. *Cal.* downy, and clothed with short taper hairs, a little viscid. *Seeds* angular, very smooth. *Down* rough. *Recept.* cellular.

On comparison with Dauphiny specimens, this *Hieracium* proved different from the true *prenanthoides* of Villars, for which it had been taken, and it is still more unlike the American *H. Kalmii*.

18. *H. prenanthoides*. Rough-bordered Hawkweed.

Stem erect, leafy, solid, many-flowered, corymbose, with downy glandular stalks. Leaves somewhat toothed, clasping, rough near the edge; glaucous beneath; upper ones heart-shaped.

H. prenanthoides. *Villars Dauph.* v. 3. 108. *Willd. Sp. Pl.* v. 3. 1590. *Engl. Bot.* v. 32. t. 2235. *Comp. ed.* 4. 132. *Hook. Scot.* 232.

H. spicatum. *Allion. Pedem.* v. 1. 218. t. 27. f. 1, 3. *Dicks. Tr. of Linn. Soc.* v. 2. 288. *Crypt. fusc.* 2. 29.

In woods and thickets in the south of Scotland. *Dickson.*

On the banks of the Esk, near Forfar. *Mr. G. Don.* Near Pitmain. *Mr. J. Mackay.*

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Perennial. *August.*

Like the last in size and general habit, but essentially distinct.

The *stem* is entirely solid. *Leaves* clasping the stem with their dilated rounded base; rough towards the margin, and at the very edge, with rigid tawny hairs. *Fl.* not cymose, but corymbosely panicked, their *stalks*, like the *calyx*, rough with very copious glandular hairs.

I cannot refer this or the last to any of Haller's species, many of which have not yet been detected in Britain.

19. *H. umbellatum*. Narrow-leaved Hawkweed.

Stem erect, leafy, almost solid, imperfectly umbellate. Leaves scattered, linear, slightly toothed, nearly smooth as well as the calyx.

H. umbellatum. *Linn. Sp. Pl.* 1131. *Willd. v.* 3. 1591. *Fl. Br.* 835. *Engl. Bot. v.* 25. *t.* 1771. *Curt. Lond. fasc.* 6. *t.* 58. *Hook. Scot.* 233. *Fl. Dan. t.* 680.

H. n. 34. *Hall. Hist. v.* 1. 15.

H. fruticosum angustifolium majus. *Bauh. Pin.* 129. *Raii Syn.* 168.

H. intybaceum. *Ger. Em.* 298. *f.*

H. primum. *Dod. Pempt.* 638. *f.*

H. sabaudum. *Lob. Advers.* 88. *Dalech. Hist.* 570. *f.*

H. alterum grandius. *Lob. Ic.* 240. *f.*

H. rectum rigidum, quibusdam sabaudum. *Bauh. Hist. v.* 2. 1030. *f.*

Long Hairy Hawklung. *Petiv. H. Brit. t.* 13. *f.* 8; and Narrow Hairy Hawklung. *f.* 10.

β. *Pulmonaria angustifolia glabra*. *Dill. in Raii Syn.* 168.

Narrow Smooth Hawklung. *Petiv. H. Brit. t.* 13. *f.* 11.

γ. *Pulmonaria graminea*. *Dill. in Raii Syn.* 168.

Grass Hawklung. *Petiv. H. Brit. t.* 13. *f.* 12.

In groves, gravelly thickets, and shady rocky situations.

Perennial. *August, September.*

Root with many simple fibres. *Stem* 2 or 3 feet high, erect, but not very straight, leafy, round, unbranched, pithy, with a small cavity in the centre, either slightly hairy, or quite smooth, corymbose, or more generally inaccurately umbellate, at the summit, in which part it is often attacked by insects, producing an oval tumour, as represented by John Bauhin. *Leaves* numerous, sessile, linear, or linear-lanceolate, distantly toothed; in γ very narrow and quite entire; they are often roughish, especially at the margin, and slightly hairy; sometimes quite smooth; always bright green above; paler beneath. *Fl.* bright yellow, not very numerous, about an inch in diameter; their *stalks* minutely downy. *Bractees* linear, few and small. *Cal.* dark green, almost perfectly smooth, except at the very base; the tips of its scales a little spreading or recurved. *Seeds* angular, brown, finely dotted. *Down* rough. *Recept.* slightly cellular.

Several doubtful or imperfect specimens of *Hieracium*, sent from Scotland by the late indefatigable and sagacious Mr. George Don, lead me to concur in the wishes of my friend Dr. Hooker, that an accurate examination of this difficult genus, on its native mountains, might be undertaken by competent practical botanists. One of these specimens leads me to doubt whether it may not have been mistaken for *H. amplexicaule*, a species which, without more information, I scruple here to admit. Whoever wishes to render himself master of this subject should have abundant leisure and patience, to investigate each wild species in different soils and situations, and to cultivate each under his own continual inspection. They might then, by a good botanist, be probably cleared up without much uncertainty.

378. CREPIS. Hawk's-beard.

Linn. Gen. 403. *Juss.* 169. *Fl. Br.* 836. *Lam. t.* 651. *Gærtn. t.* 158. *Hieracioides. Vaill. Mém. de l'Ac. des Sc.* 712. *f.* 47, 52.

Common Cal. double; outermost very short, lax, tumid, deciduous; inner ovate, simple, furrowed, permanent, of several linear converging scales. *Cor.* compound, of numerous, imbricated, uniform, perfect, ligulate, abrupt, 5-toothed *florets*. *Filam.* capillary, very short. *Anth.* in a cylindrical tube. *Germ.* obovate-oblong. *Style* thread-shaped, slightly prominent. *Stigm.* 2, spreading. *Seed-vessel* none, the inner calyx converging, hardened. *Seed* oblong, acute. *Down* capillary, radiating, either on a roughish stalk, or sessile. *Recept.* slightly cellular, or scaly, with a few bristly hairs interspersed.

Annual, biennial, or perennial, upright, branching, bitter, more or less milky, *herbs*; with pinnatifid, sinuated, or toothed, *leaves*; and yellow, rarely reddish, *flowers*. The elevated *seed-down*, and lax external *calyx*, distinguish this genus from *Hieracium*.

1. *C. foetida*. Stinking Hawk's-beard.

Leaves hairy, pinnatifid, with reversed teeth; on toothed footstalks. Stem hairy. Calyx downy.

C. foetida. Linn. Sp. Pl. 1133. *Willd. v.* 3. 1598. *Fl. Br.* 837. *Engl. Bot. v.* 6. *t.* 406. *Dicks. H. Sicc. fasc.* 18. 20.

C. n. 29. *Hall. Hist. v.* 4. 12.

Hieracium castorei odore, monspeliensium. *Raii Syn.* 165.

H. luteum, cichorii sylvestris folio, amygdalas amaras olens. Morris. v. 3. 63. *sect.* 7. *t.* 4. *f.* 4.

H. foliis cichorii sylvestris villosis, odore castorei. Magnol Monsp. 129. *f.*

Erigeron tertium. *Dod. Pempt.* 641. *f.*

E. tomentosum alterum. *Ger. Em.* 279. *f.*

Erygeron tomentosum. *Lob. Ic.* 226. *f.*

Senetionis species Dodonæi. *Dalech. Hist.* 577. *f.*

Castor Hawkweed. *Petiv. H. Brit. t.* 12. *f.* 8.

On dry chalky ground, but rare.

In Cambridgeshire. *Ray, Relhan.* In Charlton chalk-pits, Kent.

Petiver. At Barton, Norfolk. *Rev. Mr. Forby, and Mr. Pitchford.*

Biennial. *June, July.*

Root tapering. *Herb* light green, moderately hairy all over, very milky, with a strong smell of bitter almonds. *Stems* several, spreading, a foot or more in height, the central one only being quite erect; all round, solid, leafy, more or less branched. *Leaves* deeply and unequally runcinate, running down into winged and toothed *footstalks*; the terminal lobe large, acutely triangular. *Fl.* several, solitary, on long, terminal, furrowed, rough stalks, rather swelling upward. *Outer Cal.* of a few lanceolate scales, shrinking as the flower fades; *inner* hairy and downy, hardened by age, and permanently erect. *Cor.* pale yellow; of a delicate red underneath. *Seeds* tawny, furrowed. *Down* simple, roughish, on a long rough stalk. *Recept.* furnished with short hair, fringing its shallow cells. The *flowers* droop in the bud, and after expansion close very early in the day; but I believe they open for several successive mornings, like the exotic *C. rubra*. This last is *Chondrilla purpurascens fœtida*. *Bauh. Prodr.* 68. *f.*; quoted by Willdenow for *Crepis fœtida*.

2. *C. pulchra.* Small-flowered Hawk's-beard.

Leaves downy, toothed; radical ones obovate; the rest somewhat arrow-shaped and clasping. Panicle corymbose, spreading. Calyx pyramidal, smooth.

C. pulchra. *Linn. Sp. Pl. ed. 1.* 806. *ed. 2.* 1134. *Sm. Tr. of. Linn. Soc. v.* 10. 344. *Comp. ed.* 4. 132. *Engl. Bot. v.* 33. *t.* 2325. *Hook. Scot.* 233.

Prenanthes hieracifolia. *Willd. Sp. Pl. v.* 3. 1541.

P. pulchra. *DeCand. Fr. v.* 4. 7.

Hieracium pulchrum. *Bauh. Hist. v.* 2. 1025. *f.*

H. montanum alterum, leptomacrocaulon. *Column. Ephr.* 248. *t.* 249.

H. annuum montanum fruticosius, caule canaliculato. *Moris. v.* 3. 68. *sect. 7. t.* 5. *f.* 37.

Lapsana chondrilloides. *Linn. Sp. Pl. ed. 1.* 812.

On rocky hills in Scotland, rare.

Amongst crumbling rocks, on the hill of Turin, near Forfar. *Mr. G. Don.*

Annual. *June—September.*

Root tapering. *Herb* finely downy, milky, varying much in luxuri-

ance. *Stem* from 1 to 2 feet high, erect, round, furrowed, hollow, leafy ; unbranched below ; paniced above. *Leaves* with sharp, shallow, partly reversed teeth ; *radical* ones obovate, tapering down into a winged *footstalk* ; *upper* ones sessile, acute, clasping the stem with their arrow-shaped, or heart-shaped, bases. *Panicle* corymbose, with many long, wide-spreading, striated branches. *Bracteas* small, acute, solitary at the base of each branch or flower-stalk. *Fl.* solitary at the extremities of the branches, erect, small, yellow, closing about noon. *Cal.* truly that of a *Crepis*, the scales composing the outer one small, membranous and lax, finally withering, if not deciduous ; those of the inner parallel, linear ; at first smooth, even, and flat, but acquiring, as the seed ripens, a strong, hard, rounded, prominent mid-rib, which last is a peculiar character. *Florets* downy externally. *Seed* slender, finely striated, beaked. *Down* rough, sessile on the summit of the beak, and wanting a real *stalk* ; but it seems to me that, as the stalk varies in length in several species, this part is of less weight in the generic character than the *calyx*, which is so peculiar. The *florets* being rather numerous, in several rows, agree too ill with the essential and very peculiar character of *Prenanthes*. The *receptacle* is small, slightly cellular.

3. *C. tectorum*. Smooth Hawk's-beard. Smooth Succory Hawkweed.

Radical leaves runcinate ; the rest clasping, lanceolate and toothed. Stem smooth. Calyx rough. Seed-down sessile.

C. tectorum. Linn. *Sp. Pl.* 1135. Willd. *v.* 3. 1601. *Fl. Br.* 837. *Engl. Bot.* *v.* 16. *t.* 1111. *Curt. Lond. fasc.* 5. *t.* 55. *Hook. Scot.* 233. *Fl. Dan.* *t.* 501.

C. n. 33. *Hall. Hist.* *v.* 1. 14.

Hedypnois tectorum. *Huds.* 341.

Hieracium luteum glabrum, sive minus hirsutum. *Raii Syn.* 165. *Bauh. Hist.* *v.* 2. 1024. *f.* 1.

H. lactucæ folio. *Dill. in Raii Syn.* 164.

H. aphacoides. *Ger. Em.* 297. *f.*

H. foliis et facie Chondrillæ. *Lob. Ic.* 239. *f.*

H. secundum. *Tabern. Kreuterb.* 491. *f.*

H. Chondrillæ folio glabrum. *Bauh. Pin.* 127. *Moris. v.* 3. 67. *sect.* 7. *t.* 7. *f.* 29.

Cichorium pratense luteum lævius. *Bauh. Pin.* 126.

Hawkbeard. *Petiv. H. Brit.* *t.* 12. *f.* 5, 6, 7.

In dry pastures, meadows, and waste ground, as also on cottage roofs, old walls, and banks, every where.

Annual. June—September.

A very variable herb in shape and luxuriance, as well as smoothness, generally of a fine deep shining green, nearly smooth, ex-

cept the *calyx*, which is more or less downy, and glandular. *Root* tapering, milky like the rest of the plant. *Stem* from 1 to 2 feet high, leafy, upright, branched, furrowed, sometimes slightly hairy, always stained with purple near the ramifications. *Leaves* smooth, variously runcinate, or jagged, the upper ones dilated and clasping at the base, where also they are most toothed. *Panicle* slender, lax, corymbose, roughish, with awl-shaped *bracteas*. *Fl.* bright yellow, much smaller than those of any other common plant of this tribe, except *Lapsana*. *Outer*, as well as *inner*, *calyx* glandular, and rough; the former of several membranous, withering, but scarcely deciduous, scales; the latter not much altered after flowering. *Seeds* furrowed. *Down* rough, sessile, like the last. *Recept.* with shallow rough-edged cells.

4. *C. biennis*. Rough Hawk's-beard.

Leaves pinnatifid, runcinate, rough; their lobes toothed in front. *Calyx* somewhat bristly and downy.

C. biennis. *Linn. Sp. Pl.* 1136. *Willd. v. 3.* 1603. *Fl. Br.* 838. *Engl. Bot. v. 3. t.* 149.

C. n. 30. *Hall. Hist. v. 1.* 13. Davall.

Hedypnois biennis. *Huds.* 342.

Hieracium maximum, *Chondrillæ folio*, *asperum*. *Raii Syn.* 166.

Bauh. Prodr. 64; according to his herbarium. *Haller.*

H. erucæfolium hirsutum. *Bauh. Hist. v. 2.* 1025. *f.*

Tall Succory Hawkweed. *Petiv. H. Brit. t. 12. f.* 10.

β. *Hieracium Cichorei folio minus*. *Dill. in Raii Syn.* 165.

Small Succory Hawkweed. *Petiv. H. Brit. t. 12. f.* 9.

In chalky pastures.

Plentiful in several parts of Kent. *Ray, Huds.* Near Bury St. Edmund's. *Mr. Mathew.*

Biennial. *June, July.*

Root spindle-shaped. *Stem* 3 or 4 feet high, erect, stout, hollow, leafy, corymbose, very strongly furrowed; roughish above; purplish below. *Radical leaves* stalked, obovate, unequally toothed; those about the lower part of the stem pinnatifid, or runcinate, likewise on purplish *stalks*; uppermost sessile, clasping, more deeply pinnatifid, their lobes strongly toothed in front, the terminal one large; all rough with bristly hairs, especially the mid-rib beneath. *Fl.* large, lemon-coloured, reddish underneath, on furrowed stalks, with linear *bracteas*. *Outer calyx* of lax, partly membranous, scales; *inner* of longer and more downy ones, often glandular and bristly, at first flat, but subsequently acquiring a stout, or turgid, mid-rib, like every true *Crepis*. *Seeds* striated, crenate, beaked. *Down* roughish, sessile on the summit of the beak, so as to appear almost stalked. *Recept.* with fringed cells.

β is a very trifling variety, of somewhat humbler growth.

379. HYPOCHÆRIS. Cat's-ear.

Linn. Gen. 405. *Juss.* 170. *Fl. Br.* 840. *Vaill. Mém. de l'Ac. des Sc.* 740. f. 21, 28. *Lam. t.* 656. *Gærtn. t.* 160.

Achyrophorus. Gærtn. t. 159.

Common Cal. ovate, imbricated, with lanceolate acute scales, the outer ones gradually smaller, all permanent, unchanged. *Cor.* compound, of numerous, imbricated, uniform, perfect, ligulate, abrupt, 5-toothed *florets*. *Filam.* capillary, very short. *Anth.* in a cylindrical tube. *Germ.* obovate. *Style* thread-shaped, prominent. *Stigmas* recurved. *Seed-vessel* none, except the permanent, finally spreading, or reflexed calyx. *Seed* oblong, acute, furrowed, rough. *Down* feathery, stalked, or partly sessile. *Recept.* chaffy, with linear-lanceolate smooth scales, as long as the seeds, or longer.

Milky herbs, with or without a simple or branched *stem*. *Leaves* undivided, toothed, rough or smooth. *Fl.* various in size, yellow.

1. *H. maculata*. Spotted Cat's-ear.

Stem solitary, nearly naked, mostly simple. Leaves ovate-oblong, undivided, toothed.

H. maculata. Linn. Sp. Pl. 1140. *Willd. v.* 3. 1620. *Fl. Br.* 840. *Engl. Bot. v.* 4. t. 225. *Hook. Scot.* 234. *Fl. Dan. t.* 149.

Hieracium primum latifolium. Raii Syn. 167. *Ger. Em.* 301. f. *Clus. Hist. v.* 2. 139. f. *Pann.* 640. f. 641.

H. alpinum latifolium hirsutum incanum, magno flore. Moris. v. 3. 69. *sect. 7. t.* 5. f. 53.

Broad Mouse-ear. *Petiv. H. Brit. t.* 11. f. 4.

In open high chalky pastures.

On Newmarket heath and Gogmagog hills. *Ray, Relhan.* On Bernuk, or Bernack, heath, Northamptonshire. *Ray.* On Ompherhead, by Cartmel wells, Lancashire, very plentifully; Mr. Hall; and near Settle, Yorkshire; Mr. Caley. *With.* At Icklingham, near Bury, Suffolk. *Sir T. G. Cullum, Bart.* In dry woods to the east of Forfar. *Mr. G. Don.*

Perennial. *July.*

Root externally black, thick, running deep into the ground, very milky, like the herbage. *Leaves* all radical, except in luxuriant plants, oblong, very irregularly toothed, rough with short hairs, dark green, blotched with brown, or dark red. *Stem* usually simple and single-flowered, rarely divided, round, roughish, hollow, bearing one or two small lanceolate leaves, which might be termed *bractœas*, and the *stem* a radical *stalk*, were there not sometimes a considerable leaf or two on the latter. *Fl.* large,

yellow, closing in the afternoon. *Cal.* rough with black as well as white bristles. Scales of the *receptacle* long, narrow, and membranous. *Seeds*, according to Linnæus, wrinkled.

Linnæus, as well as Haller, confounded this species with *H. helvetica* of Jacquin, Haller's *n.* 2; but the real *maculata* was also found in Switzerland by Mr. Davall.

2. *H. glabra*. Smooth Cat's-ear.

Nearly smooth. Calyx oblong, regularly imbricated. Stems branched, somewhat leafy. Leaves toothed or sinuated. Down of the marginal seeds sessile.

H. glabra. Linn. *Sp. Pl.* 1140. Willd. *v.* 3. 1621. *Fl. Br.* 841. *Engl. Bot.* *v.* 8. *t.* 575. *Curt. Lond. fasc.* 3. *t.* 53. *Hook. Scot.* 234. *Fl. Dan.* *t.* 424.

H. n. *3. *Hall. Nomencl.* 1.

Hieracium parvum in arenosis nascens, seminum pappis densius radiatis. *Raii Syn.* 166.

H. alterum lævius minimum. *Column. Ecphr.* *v.* 2. 28. *t.* 27. *f.* 2.

On heaths and gravelly ground; also in arable land where the soil is sandy.

On the gravelly grounds near Middleton, Warwickshire. *Ray.* In Bedfordshire. *Abbot.* On Cawston heath, Norfolk. *Rev. H. Bryant.* In turnip fields about Norwich. *Mr. Crowe.* Under Greenwich park wall, on Blackheath. *Curtis.*

Annual. *June—August.*

Herb milky and bitter, extremely variable in luxuriance, of a bright shining green, and almost perfectly smooth. *Stems* numerous, hollow, smooth; the first or central one simple, straight, leafless, bearing a solitary flower; the rest rather spreading, or partly recumbent, branched, wavy, slightly leafy, from 6 to 12 or 18 inches high. *Leaves* numerous at the root, oblong, or tongue-shaped, deeply toothed, or slightly sinuated, occasionally fringed or partially hairy; those on the stem smaller, alternate, sessile. *Fl.* on terminal stalks, solitary, small, bright yellow, open in the morning only. *Cal.* slender, smooth, glaucous or purplish; the scales flat, regularly imbricated, finally reflexed. *Seeds* slender, dark brown, finely striated, rough like the down and its stalk, which latter part is wanting in those of the circumference. Scales of the *receptacle* very thin and membranous, with taper points on a level with the seed-down, deciduous. Haller long overlooked this species in Switzerland, nor was it at all well known to British botanists till Mr. Curtis's excellent figure and description appeared. In the early part of the day, turnip fields are visibly bespangled with its bright blossoms; but after they close it is less readily observable. The synonym of *Columna*, though cited by Ray, has been generally neglected.

3. *H. radicata*. Long-rooted Cat's-ear.

Leaves runcinate, bluntish, rough. Stems branched, naked, smooth. Flower-stalks scaly. Down of all the seeds stalked.

H. radicata. *Linn. Sp. Pl.* 1140. *Willd. v. 3.* 1622. *Fl. Br.* 842. *Engl. Bot. v. 12. t.* 831. *Curt. Lond. fusc. 3. t.* 52. *Hook. Scot.* 234. *Fl. Dan. t.* 150.

H. n. 3. *Hall. Hist. v. 1.* 3.

Hieracium longius radicatum. *Raii Syn.* 165. *Ger. Em.* 298. *f. Lob. Ic.* 238. *f.*

H. dentis leonis folio obtuso majus. *Bauh. Pin.* 127. *Moris. v. 3.* 66. *sect. 7. t. 4. f.* 27.

H. tertium. *Dod. Pempt.* 639. *f.*

Rough Branched Dandelion. *Petiv. H. Brit. t. 11. f.* 11.

In pastures and waste ground every where.

Root brown externally, tapering, running deep into the ground; internally white and milky. Stems several, branched, spreading, round, smooth, rather glaucous, about a foot high, hollow, without leaves, except the small lanceolate scales, solitary under each branch, might so be called; but they rather resemble *bracteas*, and were it not for the close analogy of the last species, whose stems are in part truly leafy, the present might be thought to have only radical flower-stalks. The proper leaves are numerous at the root, pressed close to the earth, choking all plants within their reach, oblong, bluntish, runcinate, rough with rigid hairs. *Fl.* large, bright yellow, solitary on terminal, hollow, swelling stalks, clothed with small, scattered, close, awl-shaped *bracteas*. *Calyx-scales* roughish at the keel, with pale, not glandular, bristles. Scales of the *recept.* thin, awl-shaped, channelled. Seeds angular and rough. Down of all of them stalked, feathery.

380. LAPSANA. Nipple-wort.

Linn. Gen. 405. *Fl. Br.* 842. *Lam. t.* 655. *Gærtn. t.* 157.

Lapsana. *Juss.* 168. *Tourn. t.* 272.

Common Cal. double, ovate; outermost of a few small, short, ovate or linear, scattered, close scales; inner of rather more numerous, linear, channelled, keeled, acute, nearly equal, permanent ones. *Cor.* compound, of several imbricated, uniform, perfect, ligulate, broadish, abrupt, 5-toothed *florets*. *Filam.* capillary, extremely short. *Anth.* in a cylindrical tube. *Germ.* obovate, small. *Style* scarcely prominent. *Stigmas* spreading. *Seed-vessel* none, except the permanent, converging, inner calyx. *Seed* ob-

378 SYNGENESIA—POLYGAM.-ÆQU. *Lapsana*.

long, angular, furrowed, smooth. *Down* none. *Recept.* naked, flat, narrow.

Herbs various in habit, more or less milky, with or without a leafy *stem*. *Leaves* toothed, or pinnatifid. *Fl.* small, yellow.

1. *L. communis*. Common Nipple-wort.

Calyx of the fruit angular. Stem branched, panicked, leafy. Leaves ovate, stalked, toothed. Flower-stalks cylindrical, even.

L. communis. *Linn. Sp. Pl.* 1141. *Willd. v.* 3. 1624. *Fl. Br.* 842. *Engl. Bot. v.* 12. *t.* 844. *Curt. Lond. fasc.* 1. *t.* 59. *Hook. Scot.* 234. *Fl. Dan. t.* 500.

L. n. 6. *Hall. Hist. v.* 1. 4.

Lampsana. *Raii Syn.* 173. *Ger. Em.* 255. *f.* *Dod. Pempt.* 675. *f.* *Bauh. Hist. v.* 2. 1028. *f.* *Lob. Ic.* 207. *f.* *Dalech. Hist.* 541. *f.* 2.

Nipple-wort. *Petiv. H. Brit. t.* 14. *f.* 12.

In waste as well as cultivated ground, frequent.

Annual. *June, July.*

Root branching, with many fibres; simple at the crown. *Herb* deep green, a little hairy. *Stem* solitary, 2 or 3 feet high, erect, round, branched, leafy, almost solid, nearly or quite smooth. *Leaves* pliant and thin, somewhat hairy; *radical* ones lyrate; *upper* alternate, stalked, ovate, acute, toothed. *Panicle* repeatedly divided, erect. *Flower-stalks* round, naked, smooth, of equal thickness throughout, with a linear-lanceolate, pointed *bractea* at the base of each. *Fl.* very small, bright yellow. *Cal.* smooth, hardened when closed about the *seeds*, which are few, angular, without any *down*, or crown of any kind.

The English name alludes to an old idea of the herb curing sore breasts, for which Camerarius reports that it has been used in Prussia.

2. *L. pusilla*. Dwarf Nipple-wort. Swine's Succory.

Stalks radical, leafless, subdivided; swelling and tubular at the summit. Leaves obovate, rough-edged, toothed.

L. pusilla. *Willd. Sp. Pl. v.* 3. 1623. *Comp. ed.* 4. 133. *Hook. Lond. t.* 65.

L. minima. *Hook. Scot.* 234.

L. n. 4. *Hall. Hist. v.* 1. 4.

Hyoseris minima. *Linn. Sp. Pl.* 1138. *Huds.* 346. *Fl. Br.* 839. *Engl. Bot. v.* 2. *t.* 95. *Fl. Dan. t.* 201. *Ehrh. Herb.* 30.

H. mascula. *Ger. Em.* 288. *f.*

Arnoseris pusilla. *Gærtn. v.* 2. 355. *t.* 157. *f.* 3.

Hieracium minimum Clusii, *Hyoseris Tabernæmontani* et Gerardi. *Raii Syn.* 173.

SYNGENESIA—POLYGAM.-ÆQU. Cichorium. 379

H. minimum. *Clus. Hist.* v. 2. 143. *f. Pann.* 647. *f.* 649.

Intybus, sive *Endivia lutea minima*, &c. *Moris.* v. 3. 53. *sect.* 7. *t.* 1. *f.* 8.

Small Swine's Succory. *Petiv. H. Brit.* t. 15. *f.* 9.

In gravelly fields.

About Hampton Court. *Doody.* At Walthamstow. *Sir W. Watson*, and *Mr. E. Forster.* Dorsetshire. *Dr. Pulteney.* Bedfordshire. *Rev. Dr. Abbot.* Near Arminghall wood, 3 miles south of Norwich.

Annual. *June.*

Root small, tapering. *Leaves* all radical, depressed, obovate-oblong, strongly toothed, scarcely hairy, but rough at the edges. *Stalks* several, more or less branched and swelling above; slender and purplish below; round, smooth, terminating in a few hollow, tumid *partial-stalks*, each bearing a small, bright, yet not full yellow, *flower.* *Cal.* smooth; its scales all linear, pointed; the inner ones finally channelled and hardened. *Seeds* angular, smooth, each crowned with an elevated border, as expressed in *Engl. Bot.* and well magnified by Gærtner, though less obvious in *Dr. Hooker's* otherwise excellent plate. The *receptacle* is smooth, slightly cellular.

Dr. Hooker justly adverts to an erroneous passage in *Engl. Bot.*, "*seeds* crowned with an elevated rim, more rarely with short simple *down.*" The first part of this sentence is correct; the latter originated in the generic character given by Linnæus, applied by him to the present plant, in consequence of a mistaken specimen in his herbarium, whose origin I cannot trace, but which he marked *minima*, affixing it to an authentic one. The description in *Fl. Brit.* is nevertheless accurate.

381. CICHORIUM. Succory.

Linn. Gen. 406. *Juss.* 171. *Fl. Br.* 843. *Tourn. t.* 272. *Lam. t.* 658. *Gærtn. t.* 157.

Common Cal. double, cylindrical; outermost of a few oblong, rather lax, shortish scales; inner of 8 or more, longer, converging, linear, equal ones, permanent, at length recurved. *Cor.* compound, of about 20 spreading, somewhat imbricated, ligulate, abrupt, deeply 5-toothed, perfect *florets.* *Filam.* capillary, very short. *Anth.* in a pentagonal tube. *Germ.* obovate. *Style* thread-shaped, equal with the stamens. *Stigmas* revolute. *Seed-vessel* none, except the converging calyx. *Seed* obscurely 5-sided, abrupt. *Down* of several chaffy upright bristles, shorter than the seed. *Recept.* slightly chaffy, beset with a few upright slender scales, shorter than the seed.

Milky, bitter, perennial or biennial, upright, leafy *herbs*,

380 SYNGENESIA—POLYGAM.-ÆQU. *Arctium*.

rendered mild and eatable by culture. *Leaves* oblong pinnatifid and toothed. *Fl.* blue, large and handsome.

1. *C. Intybus*. Wild Succory.

Flowers in pairs, both nearly sessile. Leaves runcinate.

C. Intybus. Linn. *Sp. Pl.* 1142. Willd. v. 3. 1628. *Fl. Br.* 843. *Engl. Bot.* v. 8. t. 539. *Curt. Lond. fasc.* 4. t. 56. *Mart. Rust.* t. 144. *Woodv. suppl.* t. 248. *Hook. Scot.* 234. *Fl. Dan.* t. 907.

C. n. 1. *Hall. Hist.* v. 1. 1.

C. sylvestre. *Raii Syn.* 172. *Ger. Em.* 284. *f. Matth. Valgr.* v. 1. 458. *f. Bauh. Hist.* v. 2. 1007. *f.* 1008.

C. sylvestre, sive officinarum. *Bauh. Pin.* 125.

Cichorea. *Trag. Hist.* 272. *f.*

Intubus sylvestris. *Camer. Epit.* 285. *f.*

Intubum sylvestre. *Fuchs. Hist.* 679. *f.* *Ic.* 390. *f.*

I. sylvestre angustifolium. *Dalech. Hist.* 557. *f.*

Wild Succory. *Petiv. H. Brit.* t. 14. *f.* 11.

About the borders and ridges of fields, and by road sides, chiefly on a gravelly or chalky soil, frequent.

Perennial. *July, August.*

Root spindle-shaped, fleshy, whitish, milky. *Stem* 2 or 3 feet high, either erect or oblique, solid, round, furrowed, rough with bristly hairs, leafy, alternately branched, very tough. *Radical leaves* numerous, spreading, above a span long, runcinate, toothed, roughish; those on the stem much smaller, sessile, less lobed, the upper ones heart-shaped, taper-pointed, entire. *Fl.* large and handsome, of a beautiful bright blue, axillary, in pairs, all nearly or quite sessile. *Cal.* roughish. *Anth.* and *stigm.* blue.

The root roasted is a substitute for Coffee in some parts of Germany, and is said, when simply dried, to have served to make bread. The herb, in a luxuriant cultivated state, is an excellent early fodder for horses and cows. Prof. Martyn has detailed all its agricultural properties.

Sometimes the flowers are found of a brilliant white.

** *Florets* all tubular, with a five-cleft spreading limb; an entirely natural order.

Compositæ, α , *capitatæ*. Linn. 49. *Cinarocephalæ*. Juss. 54. See *Grammar* 121.

382. ARCTIUM. Burdock.

Linn. Gen. 407. *Fl. Br.* 844.

Lappa. *Juss.* 173. *Tourn.* t. 256. *Lam.* t. 665. *Gærtn.* t. 162.

Common Cal. globular, imbricated, of numerous, lanceolate, tapering scales, ending in awl-shaped, hooked, in-

flexed, spinous points, permanent. *Cor.* compound, uniform; *florets* numerous, all perfect, equal, tubular; the tube very long and slender; limb wider, ovate, in 5 linear, regular, spreading segments. *Filam.* 5, from the tube, capillary, very short. *Anth.* in a cylindrical 5-toothed tube, as long as the corolla. *Germ.* oblong, downy at the summit. *Style* thread-shaped, longer than the stamens. *Stigm.* 2, reflexed. *Seed-vessel* none, except the permanent closed calyx, falling off entire. *Seed* 1 to each floret, inversely pyramidal, with 4 unequal blunt angles, abrupt. *Down* a tuft of simple rough bristles, shorter than the seed. *Recept.* flat, covered with narrow, linear, chaffy scales, nearly as long as the calyx. Large, branching, downy, biennial *herbs*; with alternate, undivided *leaves*; and numerous, terminal, purple *flowers*.

1. *A. Lappa*. Common Burdock, or Clot-bur.

Leaves stalked, heart-shaped, wavy, without prickles. Calyx when in seed nearly smooth.

A. Lappa. *Linn. Sp. Pl.* 1143. *Willd. v. 3.* 1631. *Fl. Br.* 844. *Comp. ed.* 4. 133. *Engl. Bot. v. 18. t.* 1228. *Curt. Lond. fasc.* 4. t. 55. *Woodv. t.* 15. *Hook. Scot.* 235.

Lappa n. 161, β . *Hall. Hist. v. 1.* 70.

L. major, *Arctium Dioscoridis.* *Bauh. Pin.* 198. *Raii Syn.* 197.

L. major. *Trag. Hist.* 837. f. *DeCand. Fr. v. 4.* 77.

Personata sive Lappa major. *Matth. Valgr. v. 2.* 497. f. *Camer. Epit.* 887. f. *Dalech. Hist.* 1055. f.

P. Lappa major, *Bardana.* *Lob. Ic.* 588. f.

Bardana major. *Ger. Em.* 809. f.

Burdock. *Petiv. H. Brit. t. 23. f.* 1.

β . *Lappa major*, *capitulo glabro maximo.* *Dill. in Raii Syn.* 196.

γ . *L. vulgaris major*, *capitulis foliosis.* *Pluk. Almag.* 205. *Dill. in Raii Syn.* 197.

L. rosea. *Bauh. Prodr.* 102, not 210.

Rose Burdock. *Petiv. H. Brit. t. 23. f.* 2.

δ . *Lappa major*, *capitulis parvis glabris.* *Dill. in Raii Syn.* 197.

L. n. 161, γ . *Hall. Hist. v. 1.* 70.

Small-headed Burdock. *Petiv. H. Brit. t. 23. f.* 3.

In waste ground, by way sides, and on dunghills, common.

The varieties I have not met with.

Biennial. *July, August.*

Root tapering, fleshy. *Stem* erect, 3 feet or more in height, solid, leafy, round, furrowed, with many wide-spreading branches.

Leaves scattered, stalked, broad, heart-shaped, undulated, veiny; three-ribbed at the base; somewhat hoary and downy beneath.

Fl. axillary, either sessile or stalked, generally globose, with little or no woolliness about the *calyx*; in γ encompassed with a few small leaves; in δ said to be rather ovate, not larger than filberds. *Florets*, with their *anthers* and *stigmas*, purple. The *calyx*, when in seed, easily breaks from its stalk, and is well known by the name of a Bur, sticking to the coats of animals, and the hair or clothing of young rustics, which can hardly be cleared of such incumbrances without breaking the scales asunder and scattering the seeds.

The surface of the herbage leaves a slightly viscid, very bitter, exudation on the fingers. The plant itself, a very cumbrous weed, is removed, the first year of its growth, by stubbing, like other things comprehended by farmers under the name of docks, and paid for accordingly to the weeder.

2. *A. Bardana*. Woolly-headed Burdock.

Leaves stalked, heart-shaped, nearly entire and even, without prickles. Calyx when in seed cottony.

A. Bardana. Willd. *Sp. Pl.* v. 3. 1632. *Comp. ed.* 4. 133. *Engl. Bot.* v. 35. t. 2478.

A. Lappa. Linn. *Sp. Pl.* 1143 β . *Fl. Dan.* t. 642.

Arction montanum, et *Lappa minor* Galeni. Lob. *Ik.* 587. f.

Lappa n. 161, α . Hall. *Hist.* v. 1. 70.

L. tomentosa. Allion. *Pedem.* v. 1. 144. *DeCand.* v. 4. 77.

L. major montana, capitulis tomentosus. Raii *Syn.* 197.

Personata, sive *Lappa major*, altera. Matth. *Valgr.* v. 2. 498. f. Dalech. *Hist.* 1055. f.

Personatia. Fuchs. *Hist.* 72. f. *Ik.* 41. f.

Great Woolly-headed Burdock. Petiv. *H. Brit.* t. 23. f. 5.

β . *Lappa major montana*, capitulis minoribus, rotundioribus et magis tomentosus. Raii *Syn.* 197.

Personata altera, cum capitulis villosis. Bauh. *Hist.* v. 3. 571. f.

Small Woolly-headed Burdock. Petiv. *H. Brit.* t. 23. f. 4.

γ . *Lappa major* ex omni parte minor, capitulis parvis, elegantè reticulatis. Pluk. *Almag.* 205. Raii *Syn.* 197.

Cobweb-headed Burdock. Petiv. *H. Brit.* t. 23. f. 6.

In waste ground, by way sides, and among rubbish, common.

β . On mountains in the north of England.

Biennial. July, August.

Like the foregoing in size and habit, but the leaves are less undulated, more downy beneath. Stem of a dull red. Cal. globose; in β smaller and more depressed; in all the varieties the scales are interwoven with dense, white, cottony down.

Professor Willdenow declares that he has often raised this second species from seed, and found it constant. In deference to his authority, I have distinguished these two species, enumerating the reputed varieties of each, that botanists, who wish to pur-

sue the inquiry, may ascertain, by culture and observation, how far any of them are entitled to rank as species. I do not profess to have investigated the subject.

383. SERRATULA. Saw-wort.

Linn. Gen. 408. *Juss.* 174. *Fl. Br.* 845. *Dill. Gen.* 138. *t.* 8. *Lam. t.* 666. *Gærtn. t.* 162.

Common Cal. oblong, nearly cylindrical, imbricated, of numerous, lanceolate, unarmed scales, permanent, unchanged. *Cor.* compound, uniform; *florets* rather numerous, perfect, equal, tubular, funnel-shaped; the limb in 5 deep equal segments. *Filam.* capillary, very short. *Anth.* in a cylindrical tube, the length of the corolla. *Germ.* obovate. *Style* thread-shaped, scarcely prominent. *Stigm.* oblong, reflexed. *Seed-vessel* none but the unaltered calyx. *Seed* obovate, somewhat angular. *Down* sessile, rough, or feathery, permanent. *Recept.* chaffy, or hairy, flat.

Perennial upright *herbs*; with serrated or pinnatifid, rarely entire *leaves*. *Fl.* corymbose, terminal, erect, crimson or purple, in some incompletely diœcious. *Seed-down* in some merely rough; in others finely feathery.

1. *S. tinctoria*. Common Saw-wort.

Leaves with copious bristly serratures, pinnatifid, somewhat lyrate; terminal lobe largest. *Seed-down* roughish.

S. tinctoria. *Linn. Sp. Pl.* 1144. *Willd. v.* 3. 1638. *Fl. Br.* 845. *Engl. Bot. v.* 1. *t.* 38. *Hook. Scot.* 235. *Fl. Dan. t.* 281. *Besl. Hort. Eyst. æstiv. ord.* 11. *t.* 4. *f.* 2.

Serratula. *Raii Syn.* 196. *Bauh. Pin.* 235. *Matth. Valgr. v.* 2. 295. *f.* *Camer. Epit.* 682. *f.* *Ger. Em.* 713. *f.* *Lob. Ic.* 534. *f.* *Bauh. Hist. v.* 3. 23. *f.* *Dod. Pempt.* 42. *f.* *Dalech. Hist.* 1357. *f.* *Carduus n.* 163. *Hall. Hist. v.* 1. 71.

Common Saw-wort. *Petiv. H. Brit. t.* 22. *f.* 6.

β. Broad Saw-wort. *Petiv. H. Brit. t.* 22. *f.* 5.

In groves, thickets, and grassy pastures.

Perennial. *July, August.*

Root rather woody. *Herb* rigid, smooth and shining. *Stem* erect, straight, 2 or 3 feet high, angular, striated, solid, often reddish, not branched, except at the summit. *Leaves* variously pinnatifid, in more or less of a lyrate manner; in β all undivided; always acute, with fine, copious, bristly serratures; now and then downy beneath. *Fl.* corymbose, handsome, of a purplish crimson. *Cal.* somewhat coloured; the edges of its scales downy.

Seed-down shorter than the *florets*, bristly, unequal, yellowish, partly rough, not feathery.

This plant gives a yellow colour to wool, for which purpose Linnæus says it is much used in Sweden. Haller records, on the authority of some foreign writers, that the above colour, fixed by means of alum, is both beautiful and permanent, and with the addition of blue, makes a better green than either *Reseda Luteola*, or *Genista tinctoria*, for dyeing wool or silk.

The Rev. R. Bree, Mr. R. Brown and the late Mr. T. Smith have observed the flowers of this species to be in effect diœcious, those on one plant having imperfect *anthers*, those on another abortive *stigmas*. See *Tr. of Linn. Soc.* v. 12. 123. v. 13. 593.

2. *S. alpina*. Alpine Saw-wort.

Leaves undivided, distantly toothed; cottony beneath.

Calyx rather ovate, finely downy. *Seed-down* feathery.

S. alpina. Linn. *Sp. Pl.* 1145. Willd. v. 3. 1641. Fl. Br. 846. Engl. Bot. v. 9. t. 599. Lightf. 448. t. 19. Hook. Scot. 235.

Cirsium n. 179. Hall. Hist. v. 1. 77. t. 6.

C. humile montanum, *Cynoglossi folio*, *polyanthemum*. Raii Syn. 193. Dill. Elth. 82. t. 70.

C. alpinum, *Boni Henrici folio*. Tourn. Inst. 448.

Carduo-cirsium minus, *cambro-britannicum*, *floribus plurimis summo caule congestis*. Pluk. Almag. 83. Phyt. t. 154. f. 3.

Carduus mollis, *foliis lapathi*. Ger. Em. 1184. f.

C. mollis, *lapathi folio*. Bauh. Hist. v. 3. 46. f. 47. Clus. Pann. 663. f. 664.

β. *Serratula alpina*. Fl. Dan. t. 37.

Cirsium montanum polyanthemum, *salicis folio angusto denticulato*. Raii Syn. 193.

In the fissures of alpine rocks.

On Snowdon, and other high mountains of North Wales. Ray.

In several parts of the Highlands of Scotland. Lightf. Hooker.

Perennial. July, August.

Root rather woody, blackish. Stems simple, erect, round, downy, from 3 to 12 inches high. Leaves very various in length and breadth, usually ovate, inclining to heart-shaped; in β lanceolate, or linear; always acute, with unequal, sharp, spinous teeth, not sufficiently expressed, as Haller observes, in the wooden cuts of Clusius and others; the upper side of a fine green, and nearly smooth; under cottony, very white; the lower leaves on longish channelled footstalks. Fl. few, in a corymbose tuft, pink with blue anthers, very handsome, the partly downy calyx-scales tipped with purple or brown. Seed-down as long as the corolla, copiously feathery.

384. CARDUUS. Thistle.

Linn. Gen. 408. *Juss.* 173. *Fl. Br.* 847. *sp.* 2, 3, 4, 7. *Lam. t.* 663. *Silybum.* *Gærtn. t.* 163.

Common Cal. tumid, imbricated, of numerous, lanceolate, spinous-pointed scales, permanent. *Cor.* compound, nearly or quite uniform; *florets* very numerous, perfect, equal, tubular, funnel-shaped; tube slender, recurved; limb ovate at the base, with 5 linear segments, one of which is a little distant from the rest. *Filam.* capillary, very short. *Anth.* in a 5-toothed cylindrical tube, about equal to the corolla. *Germ.* obovate. *Style* thread-shaped, prominent. *Stigma* simple, or cloven, oblong, naked. *Seed-vessel* none but the converging unaltered calyx. *Seed* polished, obovate, with 4 slight unequal angles, and a slender, terminal, cylindrical point. *Down* sessile, capillary, rough, very long, annular at the base, embracing the point of the seed, and, when that shrinks, deciduous. *Recept.* flat, hairy.

Herbage beset with innumerable straight spines, on the margins and teeth of the *leaves*, and wings of the *stem*. *Fl.* crimson or purple, terminal, solitary or aggregate; casually white; often imperfectly dioecious. *Root* mostly annual or biennial.

* *Leaves decurrent.*

1. *C. nutans.* Musk Thistle.

Leaves interruptedly decurrent, spinous. Flowers solitary, drooping. Calyx-scales lanceolate; their upper part spreading.

C. nutans. *Linn. Sp. Pl.* 1150. *Willd. v.* 3. 1648. *Fl. Br.* 848. *Engl. Bot. v.* 16. *t.* 1112. *Hook. Scot.* 235. *Fl. Dan. t.* 675. *Raii Syn.* 193. *Bauh. Hist. v.* 3. *p.* 1. 56. *f.*

C. n. 167. *Hall. Hist. v.* 1. 73.

C. muscatus. *Ger. Em.* 1174; *descr. only.*

Acanthium sylvestre. *Besl. Hort. Eyst. æstiv. ord.* 11. *t.* 8. *f.* 2.

Onopyxos tertius. *Dalech. Hist.* 1472. *f.*

Musk Thistle. *Petiv. H. Brit. t.* 21. *f.* 1.

In waste ground, fallow fields, and dry barren pastures, on a chalky or gravelly soil.

Annual. *July, August.*

Root spindle-shaped. *Stem* erect, 2 or 3 feet high, solid, more or less branched, many-angled, with narrow, leafy, sinuated, spinous wings, running down from the pinnatifid, slightly hairy

and cottony, likewise toothed and spinous, *leaves*. *Fl.* on downy, round, terminal stalks, solitary, drooping, crimson, large and handsome, with a sweet musky scent at all times of the day, in warm weather. *Calyx-scales* spreading, sharply spinous, somewhat leafy. *Seeds* compressed, polished, marked with dotted lines. *Down* minutely rough.

2. *C. acanthoides*. Weltered Thistle.

Leaves decurrent, sinuated, very spinous. Flowers aggregate, somewhat stalked. Calyx globose; scales linear, partly recurved.

C. acanthoides. *Linn. Sp. Pl.* 1150. *Willd. v. 3.* 1650. *Fl. Br.* 848. *Engl. Bot. v. 14. t. 973.* *With.* 698. *Hull.* 235. *Hook. Scot.* 236. *Jacq. Austr. t. 249.*

C. crispus. *Huds.* 350. *Lightf.* 452.

C. polyacanthos. *Curt. Lond. fasc. 6. t. 54.* *Schreb. Lips.* 15.

C. caule crispo. *Raii Syn.* 194. *Bauh. Hist. v. 3. p. 1.* 59. *f.*

C. spinosissimus vulgaris, *Polyacantha Theophrasti*. *Lob. Ic. v. 2.* 21. *f.*

Polyacanthos. *Ger. Em.* 1173. *f.* *Dalech. Hist.* 1473. *f.*

Weltered Thistle. *Petiv. H. Brit. t. 21. f. 2.*

About hedges and in dry waste ground, not very common.

Annual. *June, July.*

Root long and tapering. *Stem* about a yard high, much branched, with copious, wavy, continuous, spinous wings. *Herbage* green, scarcely at all downy. *Leaves* deeply pinnatifid and sinuated, green on both sides, very spinous, decurrent; radical ones stalked. *Fl.* crowded at the tops of the branches, purplish-crimson, not half the size of the last, being hardly an inch broad. *Cal.* very slightly downy; its scales narrow, evidently spinous, some of the inner ones recurved at the tips, especially at an advanced period. *Anth.* imperfect in some flowers, *stigma* in others. *Seed-down* minutely rough.

This species, before the herbarium of Linnæus came to England, was generally taken for his *crispus*, but the *leaves* of the latter are white, and mostly cottony, underneath; its *calyx-scales* more leafy and erect, the inner ones coloured. This latter, *n.* 165 of Haller, who wrongly quotes J. Bauhin, is a stranger in Britain, as our *acanthoides* appears to be in Switzerland.

3. *C. tenuiflorus*. Slender-flowered Thistle.

Leaves decurrent, sinuated, spinous. Flowers aggregate, sessile. Calyx nearly cylindrical; scales ovate at the base; somewhat recurved at the point.

C. tenuiflorus. *Curt. Lond. fasc. 6. t. 55.* *Fl. Br.* 849. *Engl. Bot. v. 6. t. 412.* *Willd. Sp. Pl. v. 3.* 1652. *With.* 698. *Hook. Scot.* 236. *Pulten. Dorset.* 80.

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C. acanthoides. *Huds.* 351. *Lightf.* 451. *Bauh. Hist.* v. 3. p. 1. 56.f.

C. n. 166. *Hall. Hist.* v. 1. 72.

C. spinosissimus, capitulis minoribus. *Raii Syn.* 194.

Gray Thistle. *Petiv. H. Brit. t.* 21.f. 3.

In dry sandy ground, chiefly near the sea.

Not uncommon on hedge banks in the outskirts of London ; but more frequent about maritime towns and villages, in England and Scotland.

Annual. *June, July.*

Root tapering, small. *Herbage* all white with cottony down. *Stem* erect, straight, slightly branched, 3 or 4 feet high, angular, with broad, deeply lobed, strongly spinous, leafy wings. *Leaves* broadish, pinnatifid and sinuated, most cottony beneath, with strong yellowish spines, less numerous than in the last. *Fl.* sessile at the tops of the branches, several together, pale rose-coloured, with much fewer *florets*, and consequently a narrower, more oblong, *calyx*, than any of our other species of this or the following genus. *Calyx-scales* dilated and ovate, rather membranous, at the base ; the upper part finally spreading, and tipped with a yellowish spine. *Seeds* grey, compressed, shining. *Down* minutely rough.

Very distinct from *C. acanthoides* and *crispus*, and, I believe, from every other Linnæan species. It must surely be what Haller intended under his *n.* 166, though I have no positive evidence, and he marks it as a doubtful native of Switzerland. The true *C. crispus* may be seen in *Loes. Pruss. t.* 5. Its *calyx* is globose.

** *Leaves sessile.*

4. *C. marianus*. Milk Thistle.

Leaves wavy, spinous, clasping the stem ; radical ones pinnatifid. *Calyx-scales* leafy, recurved, channelled ; spinous at the margin.

C. marianus. *Linn. Sp. Pl.* 1153. *Willd. v.* 3. 1659. *Fl. Br.* 851. *Engl. Bot. v.* 14. *t.* 976. *Curt. Lond. fasc.* 3. *t.* 54. *Hook. Scot.* 236. *Bauh. Hist. v.* 3. p. 1. 52.f.

C. Mariæ. *Raii Syn.* 195. *Ger. Em.* 1150.f. *Trag. Hist.* 850.f. *Fuchs. Ic.* 32.f.

C. lacteus. *Matth. Valgr. v.* 2. 38.f. *Camer. Epit.* 445.f. *Dalech. Hist.* 1464.f.

Leucographis Plinii. *Dalech. Hist.* 1475.f.

Silybum marianum. *Gærtn. v.* 2. 378. *t.* 162.

S. n. 181. *Hall. Hist. v.* 1. 78.

Spina alba hortensis. *Fuchs. Hist.* 56.f.

Milk Thistle. *Petiv. H. Brit. t.* 21.f. 9.

β. *Carduus Mariæ hirsutus non maculatus*. *Raii Syn.* 195.

In waste ground, and on the banks of ditches.

β. About London, in several places, but not common.

Annual. *June, July.*

Root tap-shaped. *Herb* very large and spreading, to the exclusion of all other plants, for the most part not hairy nor downy. *Stem* 4 or 5 feet high, in a manured soil more lofty, branched, round, solid, leafy. *Leaves* of a dark shining green, all their veins beautifully bordered with white, except in the variety β; their edges spinous. *Fl.* purple, large, solitary at the ends of the branches, erect; the stout spines of their *calyx-scales* very conspicuous. *Seeds* large, polished. *Down* rough.

385. CNICUS. Plume-thistle.

Linn. Gen. 409. *Juss.* 172. *Comp. ed.* 4. 127.

Cirsium. Tourn. t. 255. *Gærtn. t.* 163.

Common Cal. tumid, imbricated, of numerous, lanceolate, spinous-pointed scales, permanent. *Cor.* compound, nearly uniform; *florets* very numerous, equal, tubular, funnel-shaped; tube slender, recurved; limb ovate at the base, with 5 linear, nearly equidistant, segments. *Filam.* capillary, very short. *Anth.* in a cylindrical tube. *Germ.* obovate, short. *Style* thread-shaped, slightly prominent. *Stigma* oblong, more or less cloven, naked. *Seed-vessel* none but the converging unaltered calyx. *Seed* polished, obovate, with a slender, terminal, short, cylindrical point. *Down* sessile, feathery, very long, annular at the base, embracing the point of the seed, and, when that shrinks, deciduous. *Recept.* nearly flat, beset with bristly, or very narrow chaffy, scales or hairs, as long as the tubes of the florets.

Prickly herbaceous plants, like those of the last genus, from which the present differs chiefly in the *down* of the *seeds* being evidently feathery, not merely rough. Some species are, as in *Carduus*, imperfectly dioecious, either accidentally or constantly. Perhaps these two genera ought to be united, the distinction above mentioned being of no more real importance than in *Serratula*, where it is not regarded. But the great number of species in *Carduus* and *Cnicus* makes it commodious to separate them, even by an artificial character, which in itself is easy and obvious.

* *Leaves* decurrent. *Stem* winged.

1. *C. lanceolatus*. Spear Plume-thistle.

Leaves decurrent, pinnatifid, hispid, with variously-spread-

ing spinous lobes. Calyx ovate, shaggy. Stem furrowed, hairy.

C. lanceolatus. Willd. *Sp. Pl.* v. 3. 1666. *Comp. ed.* 4. 134. Hook. *Scot.* 236.

Carduus lanceolatus. Linn. *Sp. Pl.* 1149. *Fl. Br.* 847. *Engl. Bot.* v. 2. t. 107. Mart. *Rust. t.* 131. *Fl. Dan. t.* 1173.

C. lanceolatus, sive sylvestris Dodonæi. Bauh. *Hist.* v. 3. p. 1. 58. f.

C. lanceatus. Raii *Syn.* 195. Ger. *Em.* 1174. f.

C. lanceatus latifolius. Bauh. *Pin.* 385. Moris. v. 3. 153. sect. 7. t. 31. f. 7.

Cirsium n. 169. Hall. *Hist.* v. 1. 74.

Spear Thistle. Petiv. *H. Brit. t.* 21. f. 7.

β. *Carduus lanceatus, flore et capite minoribus.* Mer. *Pin.* 21. Dill. in Raii *Syn.* 195.

γ. *C. lanceatus major.* Dill. in Raii *Syn.* 195.

In waste ground, and on banks by road sides, common.

Biennial. June—September.

Root branching. Herb very prickly, of a greyish green. Stem upright, about 4 feet high, stout, solid, branched, angular, furrowed, leafy, hairy or downy, many-flowered, copiously winged with the decurrent lobed and spinous bases of the leaves, which are alternate, long, spreading, hairy above, whiter and cottony beneath, deeply pinnatifid; their lobes spreading alternately, somewhat palmate, armed with stout yellowish spines. *Fl.* large, crimson, solitary, or not much crowded, at the tops of the branches. *Cal.* of innumerable spinous-tipped scales, entangled with fine cobweb-like threads. *Florets* uniform, regular. *Anth.* yellow. *Seeds* brown, polished, their large feathery down losing its hold by the shrinking of the point, or peg, at the top of the seed, as in all of this genus and the last.

The incurious and negligent farmer would do well to observe that this cumbrous weed, being biennial, is readily destroyed, by mowing before its flowers form seed.

2. *C. palustris.* Marsh Plume-thistle.

Leaves decurrent, pinnatifid, toothed, spinous, rough. Flowers aggregate. Calyx ovate, minutely spinous, nearly smooth.

C. palustris. Willd. *Sp. Pl.* v. 3. 1662. *Comp. ed.* 4. 134. Hook. *Scot.* 236.

Carduus palustris. Linn. *Sp. Pl.* 1151. *Fl. Br.* 850. *Engl. Bot.* v. 14. t. 974. Curt. *Lond. fasc.* 6. t. 56. Raii *Syn.* 194. Bauh. *Pin.* 377. *Prodr.* 156.

C. spinosissimus erectus angustifolius palustris. Moris. v. 3. 153. sect. 7. t. 32. f. 13.

Cirsium n. 170. Hall. *Hist.* v. 1. 74; excl. Loesel's syn.

Marsh Thistle. Petiv. *H. Brit. t.* 21. f. 4.

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In moist meadows or pastures, and watery spots by road sides, common.

Biennial. *July, August.*

Root branching. *Herb* very prickly, of a deep green. *Stem* solitary, erect, straight, somewhat branched, from 3 to 5 or 6 feet high, angular, solid, clothed in every part with leafy, spinous, interrupted wings. *Leaves* deeply pinnatifid, running down into the wings, rough with short hairs, fringed with numerous prickles; slightly cottony beneath. *Fl.* deep crimson, frequently white, sessile, crowded about the tops of the stem and branches, and not a-third the size of the last. *Cal.* almost globular; its scales smooth, close, abrupt, keeled in the upper part, each bearing a small harmless spine; the innermost with leafy unarmed points. *Seeds* very smooth and even. *Down* finely feathery.

** *Leaves sessile, or partially decurrent. Stem not winged.*

3. *C. arvensis*. Creeping Plume-thistle.

Leaves sessile, pinnatifid, spinous, nearly smooth. *Stem* paniced, solid. *Calyx* ovate; outer scales spinous. *Root* creeping, tuberous.

C. arvensis. *Comp. ed.* 4. 134. *Hook. Scot.* 237. *Hosack in the American and Philos. Register*, v. 1. 211. f.

Carduus arvensis. *Curt. Lond. fasc.* 6. t. 57. *Fl. Br.* 850. *Engl. Bot.* v. 14. t. 975. *Sibth.* 245.

C. vulgatissimus viarum. *Raii Syn.* 194. *Ger. Em.* 1173. f.

Serratula arvensis. *Linn. Sp. Pl.* 1149. *Willd.* v. 3. 1646. *Huds.* 349. *With.* 696. *Mart. Rust.* t. 132. *Fl. Dan.* t. 644.

Cirsium n. 171. *Hall. Hist.* v. 1. 74.

Ceanothos Theophrasti. *Column. Ecphr.* v. 1. 45. t. 46.

Common Thistle. *Petiv. H. Brit.* t. 21. f. 5.

In cultivated fields and by way sides, a very troublesome weed.

Perennial. *July.*

Root fleshy, creeping deep in the earth to a great extent, and very tenacious of life. *Stems* erect, 3 or 4 feet high, round, furrowed, full of pith, branched and paniced, leafy, but not winged, occasionally more or less downy. *Leaves* numerous, alternate, sessile, rarely a little decurrent, pinnatifid, or sinuated, smooth, or slightly downy, armed with numerous, strong, spreading spines. *Fl.* numerous, stalked, paniced, erect, pale purple, sometimes white, for the most part diœcious in effect, though incompletely so in structure, as the late Mr. T. Smith F.L.S. has well explained in *Tr. of Linn. Soc.* v. 13. 592—603. *Cal.* ovate; its outer scales broadly lanceolate, decidedly spinous, woolly at the edges; inner much longer, with leafy points, as in many other undoubted species of *Cnicus* or *Carduus*. *Seed-down* copious, delicately feathery.

4. *C. Forsteri*. Branching Bog Plume-thistle.

Leaves slightly decurrent, pinnatifid, spinous; downy beneath. Stem paniced, hollow. Calyx ovate, rather cottony; outer scales spinous.

In boggy woods.

Near Frant, Sussex, two miles from Tonbridge Wells. *Mr. T. F. Forster*.

Perennial. *July, August*.

Root tapering, not creeping. *Stem* 3 or 4 feet high, erect, leafy, angular, furrowed, not winged; more or less branched and paniced at the top. *Leaves* rather deeply pinnatifid, with partly palmate, spreading lobes, tipped and fringed with rather small spines; the lowermost tapering at the base, and hairy or downy on both sides; those about the middle of the stem decurrent to a small extent, cottony beneath; uppermost gradually smaller and narrower, oblong, undivided, heart-shaped and clasping at the base. *Fl.* 2 or 3 together at the end of each branch, on downy stalks, erect, rather larger than the preceding, and of a fine deep crimson. *Cal.* ovate, beset with a small portion of loose deciduous web; outer scales spinous, with downy edges, like the last; inner tapering to a long, narrow, coloured point. *Seed-down* delicately feathery.

The fructification of this plant most accords with that of the two last species; while the herbage and habit approach some of the following, or rather the exotic *Cnicus rivularis*, *Willd. n. 30*, though very distinct from that, and, as far as I have been able to determine, from all other described species of *Cnicus* or *Carduus*. *Mr. Forster* observes that it increases in his garden by the root, very sparingly by seeds; perhaps from some partial imperfection in the flowers of the plants he happened to introduce.

5. *C. eriophorus*. Woolly-headed Plume-thistle.

Leaves sessile, pinnatifid, with two-ranked spinous segments; bristly above. Calyx globular, densely woolly, leafy at the base.

C. eriophorus. *Willd. Sp. Pl. v. 3. 1669. Comp. ed. 4. 134. Hook. Scot. 237.*

Carduus eriophorus. *Linn. Sp. Pl. 1153. Fl. Br. 852. Engl. Bot. v. 6. t. 386. Huds. 354. With. 700. Mill. Ic. t. 293. Jacq. Austr. t. 171.*

C. tomentosus, *Corona fratrum dictus*. *Raii Syn. 195. Lob. Ic. v. 2. 9. f.*

C. eriophorus. *Ger. Em. 1152. f. Clus. Pann. 666. f. Hist. v. 2. 154. f. Dod. Pempt. 723. f.*

C. capite tomentoso. *Bauh. Hist. v. 3. p. 1. 57. f.*

Cirsium n. 168. *Hall. Hist. v. 1. 73.*

Onopordon. *Dalech. Hist. 1472. f; bad.*

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Acanthium montanum. *Ibid.* 1446. *f.*; worse.

Jacea lutea Clusii. *Ibid.* 1474. *f.*; good. Name erroneous.

Fryar's Thistle. *Petiv. H. Brit. t.* 21. *f.* 8.

In waste mountainous ground, and by road sides, on a limestone or chalky soil.

In the counties of Worcester, Huntingdon and Cornwall. *With.*

In a gravel pit at North Pickenham, Norfolk. *Rev. Mr. Watts.*

Oxfordshire. *Sibth.* Cambridgeshire. *Relh.* Common in Bed-

fordshire. *Abbot.* In Hampshire. *Mr. Rayer.* Between Stam-

ford and Grantham plentifully; also about the zigzag walk

at Matlock bath.

Biennial. *August.*

A large and conspicuous plant, not easily overlooked. *Root* tap-shaped. *Stem* 3 feet high, with numerous wide-spreading branches, leafy, round, strongly furrowed, slightly hairy, full of pith. *Leaves* sessile, not decurrent; covered with close bristles on the upper side, and with cottony down at the back; their lobes each tipped with a strong spine, and spreading alternately in two directions, afford a singular and striking character. *Fl.* numerous, very large, purple, solitary at the end of each branch, with a smaller leaf or two close underneath. *Cal.* often about 3 inches in diameter, globose, or rather depressed, the purplish tips of its scales projecting out of the mass of cottony wool, which envelopes the whole calyx like a dense cobweb. *Seeds* obovate, polished, with a feathery down. The radical *leaves* are frequently 2 feet in length, and their lobes are disposed in double ranks with singular exactness. *Fl.* occasionally white.

6. *C. tuberosus.* Tuberous Plume-thistle.

Leaves deeply pinnatifid, lobed, fringed with prickles; lower ones on long stalks. Stem almost single-flowered, without wings or prickles. Calyx-scales minutely spinous, nearly smooth. Root creeping, tuberous.

C. tuberosus. *Willd. Sp. Pl. v.* 3. 1680. *Comp. ed.* 4. 134. *Engl. Bot. v.* 36. *t.* 2562; omitting the reference to *Gerarde.*

Carduus tuberosus. *Linn. Sp. Pl.* 1154.

C. bulbosus monspeliensis. *Lob. Advers.* 371. *f.* *Ic. v.* 2. 10. *f.* *Bauh. Hist. v.* 3. *p.* 1. 43. *f.*

C. pratensis asphodeli radice, latifolius. *Bauh. Pin.* 377.

Cirsium n. 177. *Hall. Hist. v.* 1. 76.

C. latioribus foliis viridibus laciniatis, radicibus asphodeli. *Moris. v.* 3. 151. *sect.* 7. *t.* 29. *f.* 27.

Cirsio quinto congener. *Clus. Hist. v.* 2. 149. *f.*

Acanthus sylvestris alter. *Dalech. Hist.* 1444. *f.*

In thickets on the downs of Wiltshire.

In a truly wild thicket of brush-wood, called Great Ridge, on the

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Wiltshire downs, between Boyton house and Fonthill, abundantly. *A. B. Lambert, Esq.* There I gathered it in 1819.

Perennial. *August.*

Root woody, creeping, sending down perpendicularly many elliptical, tapering, fleshy knobs, externally blackish. *Stem* about 2 feet high, erect, straight, nearly solid, round, furrowed, hairy, leafy, not at all winged; either quite simple and single-flowered, or dividing with a branch or two near the top. *Leaves* green and downy above; pale and cottony beneath; all deeply pinnatifid, with divided spinous-pointed lobes, fringed with fine prickles; the lower ones on long, slightly winged *footstalks*; upper nearly sessile; none decurrent. *Fl.* solitary at the summit of the stem or branch, erect, bright purple, twice the size of *C. palustris* or *arvensis*, and more resembling *heterophyllus*, but smaller. *Cal.* ovate, with spreading, leafy scales, a little cottony, several of the outermost tipped with small spines. *Seeds* short, obovate, with long, slender, feathery *down*.

Gerarde's figure, *p.* 728. *f.* 6, cannot be intended for this plant.

7. *C. heterophyllus*. Melancholy Plume-thistle.

Leaves clasping the stem, fringed; undivided or pinnatifid; very smooth above; densely cottony beneath. Stem downy, almost single-flowered.

C. heterophyllus. Willd. *Sp. Pl.* 1673. *Comp. ed.* 4.134. *Hook. Scot.* 237. *London.* t. 27.

Carduus heterophyllus. Linn. *Sp. Pl.* 1154. *Fl. Br.* 853. *Engl. Bot.* v. 10. t. 675. *Hull* v. 1. 235. *Fl. Dan.* t. 109.

C. helenioides. Huds. 352. *Lightf.* 457. *With.* 702.

Cirsium n. 180. *Hall. Hist.* v. 1. 77. t. 7.

C. anglicum secundum. *Clus. Hist.* v. 2. 148. *f.* *Ger. Em.* 1183. *f. Pennei.*

C. britannicum. *Clus. Pann.* 657. *f.* 658.

C. britannicum Clusii repens. *Raii Syn.* 193. *Bauh. Hist.* v. 3. *p.* 1. 46. *f.* *Mill. Ic.* 63. t. 94.

Northern Thistle. *Petiv. H. Brit.* t. 22. *f.* 2.

In moist mountain pastures in the north.

In the mountainous parts of Yorkshire, Westmoreland and Wales. *Ray and Dillenius.* In the inland Highlands of Scotland, not unfrequent. *Lightf.* In some parts of the Lowlands. *Hook.* A little way up Ben Lomond.

Perennial. *July, August.*

Root creeping. *Stem* 3 feet high, erect, hollow in the centre, leafy, round, cottony, mostly simple and single-flowered, sometimes divided and bearing a smaller lateral flower. *Leaves* lanceolate, pointed, fringed with copious, unequal, fine, bristly rather than prickly, serratures; bright green and very smooth

above; snow-white and densely cottony beneath; heart-shaped and clasping at the base; the lowermost tapering down into a *footstalk*; some of the leaves are deeply and regularly pinnatifid occasionally, to which the specific name alludes, but which none of the figures, except Dr. Hooker's, express. *Fl.* stalked, terminal, erect when expanded, large and handsome, of a fine purple. *Cal.* ovate, green, slightly downy; scales leafy, smooth except at the edges, most of them tipped with a very decided, though small, prickle. *Down* of the marginal *seeds* rough only; that of the rest feathery, partly simple at the point, as in several other species, but this is not universal in any.

The colouring of the whole plant, correctly expressed in *Engl. Bot.*, is peculiarly elegant. *Carduus helenioides* of Linnæus, likewise a *Cnicus*, to which Hudson and his followers referred this species, is very distinct, twice or thrice as tall, with numerous, always undivided *leaves*, and several aggregate, sessile, much smaller *flowers*. It is not known, either wild or cultivated, in Britain.

8. *C. pratensis*. Meadow Plume-thistle.

Leaves lanceolate, wavy or lobed, fringed with prickles; loosely cottony beneath. Stem downy, slightly leafy, single-flowered. Calyx cottony, with tapering sharp scales.

C. pratensis. *Willd. Sp. Pl.* v. 3. 1672. *Comp. ed.* 4. 134. *Hook. Scot.* 237.

Carduus pratensis. *Huds.* 353; *excl. Jacq. syn. Fl. Br.* 854. *Engl. Bot.* v. 3. t. 177. *Dicks. H. Sicc. fasc.* 18. 21.

C. dissectus. *Huds. ed.* 1. 307. *Villars Dauph.* v. 3. 15; *not of Linn.*

C. heterophyllus. *Lightf.* 456.

Cirsium anglicum. *Raii Syn.* 193. *Lob. Ic.* 583. f. *Obs.* 314. f. *Dalech. Hist.* 584. f. *Ger. Em.* 1183. f. *Lobel.*

C. anglicum, radice Hellebori nigri modo fibrosâ, folio longo. *Bauh. Hist.* v. 3. p. 1. 45. f.

C. montanum anglicum. *Ger. Em.* 1183. f. 5.

C. pannonicum primum pratense. *Clus. Pann.* 655. f. 656. *Hist.* v. 2. 148. f.

Peckham Thistle. *Petiv. H. Brit.* t. 22. f. 1.

β. *Carduus palustris mitior*, Bardanæ capitulo, summo caule singulari. *Pluk. Almag.* 82. *Dill. in Raii Syn.* 194.

In low wet pastures and meadows, especially among trees.

Perennial. *June*.

Root of several simple, fleshy, black fibres, not creeping. *Herbage* greyish green, more or less cottony. *Stem* 12 or 18 inches high, simple, round, furrowed, cottony, hollow in the centre, slightly leafy, very rarely bearing more than one flower. *Leaves* lanceolate, either wavy, or unequally toothed, or sometimes sinuated, almost pinnatifid, copiously fringed with unequal bristly

prickles ; minutely hairy or downy above ; loosely cottony, but not very white, beneath ; radical ones several, stalked, erect ; those on the stem few, small, clasping at the base. *Fl.* smaller, and of a paler purple than the preceding. *Cal.* loosely clothed with cobweb-like down ; its outer scales obscurely ribbed, ovate, tapering to a spinous point ; inner long and narrow, coloured, taper-pointed, scarcely spinous. *Seed-down* feathery, with simple tips.

The variety β , as far as can be judged from its short description, appears rather to belong to this species than to *C. palustris*, under which it is placed in *Fl. Brit.* Plukenet found this plant in the isle of Ely, and Dillenius appears not to have seen a specimen.

9. *C. acaulis*. Dwarf Plume-thistle.

Stalks radical, single-flowered, shorter than the smooth calyx.

C. acaulis. Willd. *Sp. Pl.* v. 3. 1681. *Comp. ed.* 4. 134. Hook. *Scot.* 237.

Carduus acaulis. Linn. *Sp. Pl.* 1156. *Fl. Br.* 855. *Engl. Bot.* v. 3. t. 161. Jacq. *Ic. Rar.* t. 579. *Fl. Dan.* t. 1114.

Cirsium n. 178. Hall. *Hist.* v. 1. 77.

Carlina acaulis, minore purpureo flore. Raii *Syn.* 195.

C. acaulos minor, flore purpureo. Ger. *Em.* 1158. f.

C. minor purpureo flore. Clus. *Hist.* v. 2. 156.

C. montana minor acaulos. Barrel. *Ic.* t. 493.

Chamæleon exiguus. Trag. *Hist.* 852. f. Bauh. *Hist.* v. 3. p. 1. 62. f. 63.

Dwarf Thistle. Petiv. *H. Brit.* t. 21. f. 6.

In pastures and meadows, on a gravelly or chalky soil.

Too abundant in many fields and upland grounds in Dorsetshire. Dr. Pulteney. Very frequent on commons in Norfolk and several other counties. In the time of Gerarde it grew on Blackheath.

Perennial. July, August.

Root woody, stout, blackish, simple, running deep into the ground. *Stem* entirely wanting. *Leaves* several, spreading close to the ground, in a circle near a foot in diameter, choking all other herbage, stalked, pinnatifid, bright green, smooth ; their segments somewhat palmate, abundantly prickly. *Fl.* one or more, either quite sessile, or on short, simple, downy stalks, of a fine crimson, as large as those of *Cnicus lanceolatus*. *Cal.* ovate, green, without any web or hairs, but the scales are a little downy at the edges. *Seed-down* feathery.

When cultivated in the fertile soil of a garden, this plant, like *Carlina acaulis*, and several of the next genus, acquires a stem, 3 or 4 inches in height, bearing 3 or 4 flowers.

386. ONOPORDUM. Cotton thistle.

Linn. Gen. 409. *Juss.* 173. *Fl. Br.* 856. *Vaill. Mém. de l'Ac. des Sc.* 152. f. 39. *Lam. t.* 664. *Gærtn. t.* 161.

Common Cal. orbicular, tumid, imbricated, of numerous, lanceolate, spinous-pointed scales, spreading, or erect, permanent. *Cor.* compound, uniform; *florets* very numerous, equal, tubular, funnel-shaped; tube very slender; limb in 5 deep, linear, equal segments. *Filam.* capillary, very short. *Anth.* in a cylindrical tube, with 5 teeth. *Germ.* obovate, short. *Style* thread-shaped, prominent. *Stigma* oblong, notched. *Seed-vessel* none, except the somewhat spreading calyx. *Seed* obovate, pointed, smooth. *Down* sessile, capillary, rough, annular at the base, embracing the point of the seed, and finally deciduous. *Recept.* convex, fleshy, deeply cellular, the membranous edges of the cells uneven, jagged, or fringed. Very large, hoary, spinous, annual or biennial *herbs*; generally with winged *stems*; in some species without any. *Leaves* pinnatifid, wavy, toothed, and spinous. *Fl.* purple, solitary and terminal, or aggregate and radical. The honey-comb *receptacle* characterizes the genus, and its habit also is appropriate.

1. *O. Acanthium.* Common Cotton-thistle.

Calyx-scales awl-shaped, spreading in every direction. *Leaves* ovate-oblong, sinuated, woolly on both sides.

O. Acanthium. *Linn. Sp. Pl.* 1158. *Willd. v.* 3. 1686. *Fl. Br.* 856. *Engl. Bot. v.* 14. t. 977. *Curt. Lond. fasc.* 5. t. 57. *Hook. Scot.* 238. *Fl. Dan. t.* 909.

O. n. 159. *Hall. Hist. v.* 1. 68.

Carduus tomentosus Acanthium dictus, vulgaris. *Raii Syn.* 196.

C. alatus tomentosus latifolius vulgaris. *Moris. v.* 3. 152. *sect.* 7. t. 30. f. 1.

Acanthium. *Dod. Pempt.* 721. f. *Matth. Valgr. v.* 2. 34. f. *Camer. Epit.* 441. f. *Lob. Ic. v.* 2. 1. f.

A. album. *Ger. Em.* 1149. f.

Spina alba sylvestris. *Fuchs. Hist.* 57. f. *Ic.* 33. f. *Bauh. Hist. v.* 3. p. 1. 54. f.

S. alba tomentosa latifolia sylvestris. *Loes. Pruss.* 261. t. 82.

Silibum, sive Leucantha Loniceri. *Dalech. Hist.* 1466. f. *not descr.*

Cotton Thistle. *Petiv. H. Brit. t.* 21. f. 10.

In waste ground, on hedge banks, and by road sides, in a gravelly soil, frequent.

Biennial. *July, August*

Root tap-shaped. Whole *herb* covered with white cottony pubescence, which is easily rubbed off, and according to Gerarde is used by the poor to stuff pillows or cushions ; as well as to mix with feathers, for the same purpose, by deceitful upholsterers. But it seems very inadequate in quantity, as well as quality, having no elasticity, and shrinking to nothing under the touch. The *stem* is 4 or 5 feet high, branched, and when in a growing state, may be peeled and boiled for the table ; but it has little flavour except some bitterness, which it loses by being steeped in cold water. *Leaves* oblong, spreading, lobed, notched and spinous, running down into the numerous prickly wings of the stem ; radical ones very large. *Fl.* solitary at the ends of the branches, large, of a blueish rose-colour, the *calyx* cottony, very prickly.

The large brown *seeds* are eaten by goldfinches ; and the bird-catchers about London provide themselves with heads of this Thistle and the *Carduus marianus*, to entrap these and other birds, in bright autumnal mornings.

387. CARLINA. Carline-thistle.

Linn. Gen. 410. *Juss.* 172. *Fl. Br.* 857. *Tourn. t.* 285. *Lam. t.* 662. *Gærtn. t.* 163.

Common Cal. cylindrical, somewhat tumid, radiated, imbricated, of numerous, lax, acute, permanent scales ; the innermost much the longest, coloured, polished, linear, spreading horizontally in a circle, forming a set of rays to the flat disk of the flower. *Cor.* compound, uniform, flat ; *florets* numerous, tubular, equal, all on a level, funnel-shaped, perfect ; limb in 5 deep, upright segments. *Filam.* capillary, very short. *Anth.* in a cylindrical tube, easily separating, each with 2 deflexed bristles at the base. *Germ.* obovate. *Style* thread-shaped, scarcely extending beyond the anthers. *Stigma* oblong, either divided or entire. *Seed-vessel* none but the unaltered calyx. *Seed* conical, roughish, abrupt. *Down* partly chaffy and jagged, partly feathery, permanent. *Recept.* flat, beset with linear chaffy scales, many-cleft at the top, and some bristles.

Very prickly *herbs* of a dry and rigid habit. *Fl.* handsome ; the red, yellow, or white, radiating, everlasting, internal scales of their *calyx*, imitating the ligulate *florets* of the discoid tribe of *Compositæ*, afford good specific characters, even in their colours.

1. *C. vulgaris*. Common Carline-thistle.

Stem corymbose, many-flowered. Flowers terminal. Outer calyx-scales pinnatifid; inner whitish.

C. vulgaris. Linn. *Sp. Pl.* 1161. Willd. v. 3. 1696. *Fl. Br.* 857. *Engl. Bot.* v. 16. t. 1144. Hook. Scot. 238.

C. n. 182. Hall. *Hist.* v. 1. 79.

C. sylvestris quibusdam, aliis Atractylis. Raii *Syn.* 175. Bauh. *Hist.* v. 3. p. 1. 81. f.

C. sylvestris major. Ger. *Em.* 1159. f.

Carduus. Brunf. *Herb.* v. 2. 65. f.

C. vulgaris. Matth. *Valgr.* v. 2. 32. f.

C. sylvestris. Camer. *Epit.* 439. f.

C. vulgatissimus viarum. Lob. *Ik.* v. 2. 20. f.

Atractylis mitior. Fuchs. *Hist.* 121. f.

A. vulgaris minor. Fuchs. *Ik.* 66. f.

Acarna. Dalech. *Hist.* 1484. f.

Common Carline. Petiv. *H. Brit.* t. 15. f. 10.

In dry sandy heathy pastures and fields.

Biennial. June.

Root tapering, small. *Stem* erect, firm, round, 10 or 12 inches high, leafy, downy, somewhat corymbose. *Leaves* lanceolate, sinuated and wavy, green, veiny, rigid, copiously bordered with prickles; sometimes quite smooth, but more commonly downy or woolly beneath. *Fl.* terminal, solitary, of a singular aspect, and not inelegantly variegated; the *florets* red, with yellow *anthers* and *stigmas*; the radiating scales of the *calyx* cream-coloured, polished, hygrometrical, changing their position according to the moisture of the atmosphere.

This genus was named after the Emperor Charlemagne, because, according to report, one of its species, *C. acaulis*, was pointed out to him by an angel, to cure his army of the plague. Its root is pungent, bitter, and tonic; but the large white everlasting flower is perhaps most useful, when nailed upon cottage doors, in Germany, France, or Italy, by way of a hygrometer, as it closes before rain.

*** *Florets all tubular, crowded, erect and parallel, level-topped, forming a discoid flower, without a radius of any kind, except casually.*

388. BIDENS. Bur-marigold.

Linn. *Gen.* 412. Juss. 188. *Fl. Br.* 858. Tourn. t. 262. Lam. t. 668. Gærtn. t. 167.

Nat. Ord. *Compositæ*, ϵ , *oppositifoliæ*. Linn. 49. *Corymbiferæ*, sect. 6. Juss. 55. See Grammar 124.

Common Cal. erect, of several oblong, nearly equal, parallel scales, concave, or channelled, at the back. *Cor.* compound, of several, parallel, level-topped, perfect, tubular, regular and equal *florets*; their limb ovate, with 5 marginal, spreading segments. *Filam.* from the tube, capillary, very short. *Anth.* in a cylindrical tube, slightly prominent. *Germ.* oblong, compressed, with 2 or more bristly upright points, about equal to the tube of the floret, on its outside. *Style* thread-shaped, within the tube. *Stigmas* oblong, spreading beyond the anthers. *Seed-vessel* none but the unaltered close calyx. *Seed* compressed, abrupt, angular, rough at the edges, and beaked with 2 or more bristles, rough with minute reflexed prickles. *Recept.* flat, beset with upright, chaffy, oblong, deciduous scales as tall as the florets.

Most species are occasionally liable to acquire marginal radiant fertile *florets*, destitute of *stamens*, which constitutes the character of *Coreopsis*. Such a change is nearly analogous to becoming double in the generality of *flowers*, and is not, as some have thought, a more perfect state of the compound tribe, but rather the contrary.

Herbaceous, mostly annual, upright plants, with opposite, simple or compound, lobed or serrated *leaves*. *Fl.* stalked, somewhat corymbose, erect or drooping, terminal or axillary, the base of the *calyx* encompassed with a circular row of spreading leafy *bracteas*; *disk* yellow; the radiant *florets*, when they occur, are in some species white.

Willdenow considers the *bracteas* as an outer *calyx*, in which he may perhaps be correct.

1. *B. tripartita*. Three-lobed Bur-marigold.

Leaves in three segments. *Bracteas* unequal. Bristles of the seeds two or three, erect.

B. tripartita. *Linn. Sp. Pl.* 1165. *Willd. v. 3.* 1715. *Fl. Br.* 358. *Engl. Bot. v. 16. t.* 1113. *Curt. Lond. fasc. 4. t.* 57. *Hook. Scot.* 238.

B. n. 121. *Hall. Hist. v. 1.* 51.

Verbesina, seu *Cannabina aquatica*, flore minùs pulchro, elatior et magis frequens. *Raii Syn.* 187. *Bauh. Hist. v. 2.* 1073.

Chrysanthemum cannabinum bidens, folio quinquepartito, sive vulgare. *Moris. v. 3. 17. sect. 6. t. 5. f.* 20.

Eupatorium cannabinum foemina. *Ger. Em.* 711. *f. Lob. Ic.* 529. *f.* bad.

Hepatorium aquatile. *Dod. Pempt.* 595. *f.*

Hydropiper alterum. *Dalech. Hist.* 1039. *f.*

400 SYNGENESIA—POLYGAMIA-ÆQU. *Bidens*.

β. With radiant, three-toothed, marginal florets.

Conyza palustris, foliis tripartitè divisis. *Loes. Pruss.* 53. t. 10.

Trifid Bur Marygold. *Petiv. H. Brit.* t. 20. f. 7.

In watery places, and about the sides of ditches and ponds, frequent.

Annual. *August, September.*

Root tapering, with many fibres. *Stem* 2 or 3 feet high, erect, angular, solid, smooth, leafy, with opposite axillary branches. *Leaves* opposite, on winged footstalks, dark green, smooth, strongly serrated, acute, in 3 deep segments, sometimes 5; the uppermost or lowermost generally undivided. *Fl.* terminal, solitary, of a brownish yellow, somewhat drooping, devoid of beauty and of fragrance, each surrounded by about 8 spreading, lanceolate, serrated or entire *bracteas*, unequal in size, but all extending much beyond the flower. *Seeds* with 2 or 3 prickly angles, and as many erect bristles, likewise prickly with reflexed hooks, by which the seeds stick like burs to any rough surface, and are said sometimes to injure fish, by getting into their gills. The herb gives a yellow colour to woollen or linen.

2. *B. cernua*. Nodding Bur-marigold.

Leaves lanceolate, serrated. *Flowers* drooping. *Bracteas* nearly equal, entire. *Bristles* of the seeds about four, erect.

B. cernua. *Linn. Sp. Pl.* 1165. *Willd. v.* 3. 1716. *Fl. Br.* 858. *Engl. Bot. v.* 16. t. 1114. *Curt. Lond. fasc.* 3. t. 55. *Hook. Scot.* 238. *Fl. Dan.* t. 841.

B. n. 120. *Hall. Hist. v.* 1. 50.

Verbesina pulchriore flore luteo. *Raii Syn.* 187. *Bauh. Hist. v.* 2. 1074. f.

Hydropiper aliud. *Dalech. Hist.* 1040. f.

β. With radiant, three-toothed, marginal florets.

Coreopsis Bidens. *Linn. Sp. Pl.* 1281.

Chrysanthemum cannabinum bidens, foliis integris oblongis. *Morris. v.* 3. 17. sect. 6. t. 5. f. 22.

Conyza palustris, foliis serratis. *Loes. Pruss.* 54. t. 11.

Eupatorium cannabinum chrysanthemum. *Barrel. Ic.* t. 1209.

γ. *Bidens minima*. *Linn. Sp. Pl.* 1165. *Huds. ed.* 1. 310. *Abbot* 178. *Fl. Dan.* t. 312.

B. tripartita β. *Huds. ed.* 2. 355.

Verbesina minima. *Dill. in Raii Syn.* 188. t. 7. f. 2. *Giss.* 167. *append.* 66.

Eupatorium cannabinum palmare et angustifolium. *Merr. Pin.* 37.

In ditches and ponds.

β. Frequent in Ireland, and not rare in England. *Sherard. Cheshire.* *Huds.* Norfolk, but not common. *Mr. Woodward.* In Thorpe meadows, Norwich.

γ. In dry places where water has been, or about the margins of ponds.

Annual. *September.*

Root with many stout fibres. *Herb* more erect, and taller, with less extended branches than the foregoing species. *Leaves* undivided, pointed, less deeply serrated; the upper ones dilated at the base and often combined, embracing the stem. *Fl.* drooping, though their stalks are quite straight to the very summit, larger and handsomer than the last, especially when furnished with their spreading golden rays in the variety β. The *seeds* are often smooth, and their bristles, always rough, are 4.

γ is certainly nothing more than a starved plant of this species, growing out of the water. The *flower* is drooping in my specimen from Miller's herbarium, though drawn erect by Dillenius. I have an analogous small variety of *B. tripartita* from Switzerland.

389. EUPATORIUM. Hemp-agrimony.

Linn. Gen. 413. *Juss.* 178. *Fl. Br.* 859. *Tourn. t.* 259. *Lam. t.* 672. *Gærtn. t.* 166.

Nat. Ord. Compositæ, ε, oppositifoliæ. *Linn.* 49. *Linn. MS. Corymbifera, sect. 1.* *Juss.* 55.

Common Cal. oblong, imbricated; scales lanceolate, erect, unequal, unarmed. *Cor.* compound, uniform, of a few, parallel, level-topped, perfect, funnel-shaped, regular *florets*; their limb in 5 equal spreading segments. *Filam.* 5, capillary, very short. *Anth.* in a cylindrical tube, not prominent. *Germ.* oblong, angular, small. *Style* thread-shaped, prominent, cloven as far as the top of the anthers. *Stigmas* spreading, oblong, downy, bluntish. *Seed-vessel* none, except the slightly spreading calyx. *Seed* oblong, angular. *Down* sessile, rough or feathery, permanent. *Recept.* small, naked.

Perennial roughish *herbs*, in some instances shrubby, chiefly American. *Leaves* opposite, mostly simple and strongly serrated; in our solitary species deeply divided. *Fl.* terminal, small, numerous, densely corymbose, white, blueish or reddish. Qualities bitter, aromatic and tonic.

1. *E. cannabinum.* Common Hemp-agrimony.

Leaves in three, or five, deep, lanceolate segments; the middle one longest.

E. cannabinum. *Linn. Sp. Pl.* 1173. *Willd. v.* 3. 1756. *Fl. Br.* 860. *Engl. Bot. v.* 6. *t.* 428. *Hook. Scot.* 238. *Fl. Dan. t.* 745. *Raii Syn.* 179.

402 SYNGENESIA—POLYGAM.-ÆQU. Chrysocoma.

E. n. 136. *Hall. Hist. v. 1.* 59.

E. cannabinum mas. Ger. Em. 711. *f.*

E. cannabinum vulgare, foliis trifidis et profundè dentatis. Moris. v. 3. 97. *sect. 7. t. 13. f. 1.*

E. adulterinum. Fuchs. Hist. 265. *f. Ic.* 148. *f. Bauh. Hist. v. 2.* 1065. *f.*

E. vulgare. Matth. Valgr. v. 2. 363. *f. Camer. Epit.* 757. *f.*

Herba sanctæ Kunigundis. Trag. Hist. 491. *f.*

Hemp Agrimony. Petiv. H. Brit. t. 18. f. 2.

β. Eupatorium cannabinum, folio integro, seu non digitato. Dill. in Raii Syn. 180.

In watery boggy places, about the banks of rivers especially.

Perennial. *July, August.*

Root tufted, somewhat creeping, with many long fibres. *Stems* several, 2 or 3 feet high, erect, branched, leafy, round, downy, often brown or purplish, filled with pith. *Leaves* on short stalks, deep green, downy, but rather rough to the touch, for the most part in 3 deep, lanceolate, strongly serrated lobes, sometimes in 5, when they assume a pinnate, rather than digitate form; the upper ones only, according to the confession of Dillenius himself under the variety *β*, are in that variety simple. This often happens in the wild plant. The *flowers* form dense, pale purplish, convex, corymbose tufts, at the top of the stem and upper branches. *Florets* not more than 5 or 6. *Germen* besprinkled with minute shining globules. *Seed-down* rough, rather than feathery, prominent between the florets. Whole *herb* slightly aromatic.

390. CHRYSOCOMA. Goldylocks.

Linn. Gen. 415. *Juss.* 180. *Comp. ed.* 4. 127. *Lam. t.* 698. *Gærtn. t.* 166.

Chrysocome. Dill. Gen. suppl. 167. *t.* 14.

Nat. Ord. Compositæ, γ, discoideæ. Linn. 49. *Corymbiferæ, sect. 1. Juss.* 55.

Common Cal. hemispherical, imbricated; scales linear-lanceolate, convex, pointed, unarmed. *Cor.* compound, uniform, of several tubular, level-topped, perfect, regular *florets*, longer than the calyx; their limb in 5 deep, equal, acute segments. *Filam.* 5, capillary, very short. *Anth.* in a cylindrical, 5-pointed tube, shorter than the corolla. *Germ.* oblong. *Style* thread-shaped, not longer than the corolla. *Stigmas* 2, oblong, spreading, rather tumid. *Seed-vessel* none, except the scarcely altered calyx. *Seed* obovate, compressed. *Down* sessile, copious, rough, permanent. *Recept.* flat, slightly cellular, or tuberculated, without scales or hairs.

Shrubby or herbaceous, with copious, simple, generally narrow, *leaves*; and terminal, erect, solitary or corymbose, yellow *flowers* without *rays*. Most of the species are natives of southern Africa.

1. Ch. *Linosyris*. Flax-leaved Goldylocks.

Herbaceous. Leaves linear, smooth. Calyx-scales loosely spreading.

Ch. *Linosyris*. *Linn. Sp. Pl.* 1178. *Fl. Suec.* 283. *Willd. v. 3.* 1791. *Comp. ed.* 4. 135. *Engl. Bot. v. 35. t.* 2505. *Prodr. Fl. Græc. v. 2.* 165.

Ch. n. 144. *Hall. Hist. v. 1.* 63.

Chrysocome Dioscoridis et Plinii. *Column. Ecphr. v. 1.* 81. *t.* 82.

Osyris Austriaca. *Clus. Pann.* 311. *f.* *Hist. v. 1.* 325. *f.*

Linariæ tertium genus. *Trag. Hist.* 358. *f.*

Linaria aurea Tragi. *Ger. Em.* 554. *f.*

Virga aurea, linariæ folio, floribus congestis et umbellatim dispositis. *Moris. v. 3.* 125. *sect. 7. t.* 13. *f.* 29.

On rocky cliffs, on the southern sea coast, rare.

Amongst coarse grasses, on the rocky cliff of Berryhead, Devon.
Rev. Charles Holbech.

Perennial. *August, September.*

Root creeping, with long stout fibres. *Herb* smooth. *Stems* erect, a foot high, leafy, slender, simple, rigid, unbranched. *Leaves* numerous, scattered, spreading, linear, entire, acute at each end, nearly $1\frac{1}{2}$ inch long, scarcely stalked, a little fleshy. *Fl.* bright yellow, at the top of the stem, in a corymbose tuft, various in number. *Florets* about 30. *Seeds* hairy, with long, copious, rough down.

391. DIOTIS. Cotton-weed.

Desfont. Atlant. v. 2. 260. *DeCand. Fr. v. 4.* 201.

Gnaphalium. *Tourn. t.* 261. *Gærtn. t.* 165.

Santolina. *Fl. Br.* 860. *Comp. ed.* 4. 127.

Nat. Ord. see n. 390.

Common Cal. hemispherical, imbricated; scales oblong, convex, obtuse, unarmed. *Cor.* compound, uniform, of numerous tubular, level-topped, perfect, regular *florets*, about the length of the calyx; their limb in 5 broadish, equal, spreading segments; tube contracted at the summit; elongated at the base on each side, below its insertion, into 2 opposite, compressed, equal, nectariferous *spurs*, which finally separate from the rest of the tube and remain attached to the germen. *Filam.* capillary, very short. *Anth.* in a cylindrical tube, equal to the corolla.

Germ. oblong, slender, between the spurs. *Style* thread-shaped, the length of the corolla. *Stigmas* 2, spreading, obtuse. *Seed-vessel* none but the unchanged calyx. *Seed* oblong, compressed, tapering at the base, bordered at each side with the compressed, obtuse spurs of the corolla. *Down* none. *Recept.* convex, nearly globular, small, beset with oblong, concave, downy-tipped scales, nearly as tall as the flowers.

Only one species, a densely cottony, perennial, corymbose herb, with simple crenate leaves, and tufted, yellow, discoid flowers. It is generally taken for the original ancient *Gnaphalium* of Dioscorides, being frequent on all the shores of the Archipelago; and Tournefort, who confirms this opinion in his *Voyage* v. 1. 10, detected, with great sagacity, an essential generic character in the 2 spurs of each *floret*, which form a sort of wings to the seed. Gærtner, Desfontaines, and other able botanists, have confirmed this, and I can no longer refuse to admit the genus, though its original name is transferred to another well-known and very ample one, from which it could not, without great inconvenience, be removed. *Diotis*, invented by Desfontaines, well expresses the essential character, of a pair of ears to the seed. Still I cannot but wish that the habit were more distinct from *Santolina*. Willdenow has a genus called *Diotis*, *Sp. Pl.* v. 4. 368, but of later date than this of Desfontaines.

1. *D. maritima*. Sea Cotton-weed.

D. maritima. Hook. Lond. t. 137.

D. candidissima. Desfont. Atlant. v. 2. 261. DeCand. Fr. v. 4. 201.

Santolina maritima. Linn. Ms. in Sp. Pl. 1182. Willd. v. 3. 1799.

Fl. Br. 860. *Engl. Bot.* v. 2. t. 141. *Comp. ed.* 4. 135. *Huds.* 356.

Dicks. H. Sicc. fasc. 6. 11. *Pulten. Dorset.* 80.

Athanasia maritima. Linn. Sp. Pl. 1182.

Filago maritima. Linn. Sp. Pl. ed. 1. 927. Mill. Ic. 90. t. 135.

Gnaphalium. Matth. Valgr. v. 2. 213. f. Camer. Epit. 605. f. Dalech. Hist. 1115. f.

G. maritimum. Bauh. Pin. 263. Raii Syn. 180. Bauh. Hist. v. 3. p. 1. 157. f.

G. marinum. Ger. Em. 640. f. Lob. Ic. 480. f.

G. marinum tomentosum. Dalech. Hist. 1387. f.

G. legitimum. Gærtn. v. 2. 391. t. 165. Clus. Hist. v. 1. 329. f.

Chrysanthemum perenne gnaphaloides maritimum. Moris. v. 3. 21. sect. 6. t. 4. f. 47.

Polium gnaphaloides. Alpin. Exot. 147. t. 146.

Sea Cotton-weed. *Petiv. H. Brit. t. 20. f. 8.*

On the sandy sea coast, rare.

In Anglesea and Cornwall. *Ray.* Dorsetshire and the isle of Shepey. *Huds. Pulteney.* On the beach just above high-water mark, one mile north of Landguard fort, Suffolk, 1793; also between Lowestoft and Pakefield, and on other parts of the Suffolk coast.

Perennial. *August, September.*

Root branched and tufted, running very deep into the sand. *Whole herb* densely cottony and singularly white. *Stems* scarcely a foot high, recumbent at the base, branched and corymbose above, round, copiously leafy. *Leaves* scattered, in four rows, sessile, oblong, obtuse, flat, crenate, withering, permanent, being held together by their cottony coating. *Fl.* yellow, in terminal corymbose tufts. *Cal.* densely woolly. *Seeds* brown.

My friend Dr. Hooker has, like the learned M. Cassini, well resisted the gratuitous change of the excellent and original specific name.



SYNGENESIA—POLYGAM.-SUPERF.

392. TANACETUM: Tansy.

Linn. Gen. 417. *Juss.* 184. *Fl. Br.* 862. *Tourn. t.* 261. *Lam. t.* 696. *Gærtn. t.* 165.

Nat. Ord. *Compositæ*, γ , *discoideæ*. *Linn.* 49. *Corymbiferæ*, *sect.* 4. *Juss.* 55.

Common Cal. hemispherical, imbricated; scales elliptic-oblong, compact, the innermost membranous at the margin. *Cor.* compound, of two kinds of *florets*; those of the *disk* numerous, tubular, regular, level-topped, with a 5-cleft limb, perfect; of the *radius* few, sometimes wanting, tubular at the base, their limb flat, spreading, slightly prominent, 3-cleft, without stamens. *Filam.* in the florets of the disk only, capillary, very short. *Anth.* in a cylindrical tube. *Germ.* in all the florets obovate, compressed. *Style* thread-shaped. *Stigmas* 2, a little prominent, recurved, obtuse. *Seed-vessel* none but the permanent calyx. *Seed* oblong, angular, crowned with a slight membranous border. *Recept.* convex, dotted, naked.

Bitter, strongly aromatic *herbs*, with alternate, or scattered,

simple, pinnate, or bipinnate *leaves*, and corymbose, yellow, scarcely radiated, *flowers*.

1. *T. vulgare*. Common Tansy.

Leaves doubly pinnatifid, deeply serrated, naked.

T. vulgare. *Linn. Sp. Pl.* 1184. *Willd. v.* 3. 1814. *Fl. Br.* 862. *Engl. Bot. v.* 18. *t.* 1229. *Woodv. t.* 115. *Hook. Scot.* 239. *Bull. Fr. t.* 187.

T. n. 132. *Hall. Hist. v.* 1. 57.

Tanacetum. *Raii Syn.* 188. *Ger. Em.* 650. *f.* *Matth. Valgr. v.* 2. 259. *f.* *Camer. Epit.* 650. *f.* *Brunf. Herb. v.* 1. 250. *f.* *v.* 2. 87. *f.* *Trag. Hist.* 158. *f.*

T. millefolii foliis. *Lob. Ic.* 749. *f.*

Artemisia monoclonos. *Fuchs. Hist.* 46. *f.*

A. tenuifolia. *Fuchs. Ic.* 27. *f.*

Athanasia, seu *Tanacetum*. *Dalech. Hist.* 955. *f.*

Tansy. *Petiv. H. Brit. t.* 20. *f.* 9.

β . *Tanacetum foliis crispis*. *Bauh. Pin.* 132. *Dill. in Raii Syn.* 188.

T. crispum anglicum. *Ger. Em.* 650. *f.*

T. cristatum anglicum speciosum. *Lob. Ic.* 749. *f.* *Dalech. Hist.* 956. *f.*

Curled Tansy. *Petiv. H. Brit. t.* 20. *f.* 10.

In hilly pastures, hedges, and by road sides.

Perennial. *July, August*.

Root moderately creeping. *Stems* $1\frac{1}{2}$ or 2 feet high, erect, rather angular, leafy, solid, unbranched, smooth. *Leaves* doubly and deeply pinnatifid, and sharply cut, dark green, smooth. *Fl.* numerous, of a golden yellow, terminal, densely corymbose, the marginal *florets* scarcely apparent, and often wanting. *Seeds* with a quadrangular entire crown.

Every part is very bitter, with a strong, but not unpleasant, scent.

The qualities are esteemed of a tonic and cordial nature, expelling intestinal worms, and strengthening the digestive powers. The plant however does not agree with every stomach.

The curled variety, β , first noticed in England, is kept for use in gardens, as being more wholesome, or milder, than the wild sort; but Tansy pudding is now out of fashion.

393. ARTEMISIA. Wormwood, Southernwood, and Mugwort.

Linn. Gen. 418. *Juss.* 184. *Fl. Br.* 863. *Tourn. t.* 260. *Lam. t.* 695. *Gærtn. t.* 164.

Absinthium. *Tourn. t.* 260. *Lam. t.* 695. *Gærtn. t.* 164.

Nat. Ord. Compositæ, ζ , *nucamentaceæ*. *Linn.* 49. *Corymbiferaæ*, *sect.* 4. *Juss.* 55.

Common Cal. roundish, imbricated; scales rounded, convex, compact, membranous at the edges. *Cor.* compound; *florets* of the *disk* numerous, perfect, tubular, their limb 5-cleft; those of the *circumference* few, with or without a small, tubular, tongue-shaped, undivided petal, but no stamens. *Filam.* in the florets of the disk only, very short. *Anth.* in a 5-toothed tube. *Germ.* in all the florets small, obovate. *Style* prominent, deeply divided. *Stigmas* cloven or notched, recurved. *Seed-vessel* none, except the scarcely altered calyx. *Seed* obovate, naked. *Recept.* rather convex, either naked or hairy.

A numerous genus, herbaceous or shrubby, bitter, or in some degree aromatic, almost without exception perennial. *Leaves* alternate, more or less divided, or pinnatifid. *Fl.* in paniced clusters or tufts, small, not showy. *Herbage* often hoary, or silky.

No genus can be more natural, in spite of the differences of the *receptacle*, which in some species is smooth, in others hairy, affording an example of aberration in that part, which is not accompanied by any natural or characteristic distinction in any other. Linnæus, Jussieu, DeCandolle, and most leading botanists besides, have therefore happily preserved this genus entire.

1. *A. campestris*. Field Southernwood.

Leaves in many linear segments. Stems procumbent before flowering, wand-like.

A. campestris. Linn. *Sp. Pl.* 1185. Willd. *v.* 3. 1827. *Fl. Br.* 863. *Engl. Bot.* *v.* 5. *t.* 338.

A. n. 131. Hall. *Hist.* *v.* 1. 57.

A. tenuifolia, sive *leptophyllos*, aliis *Abrotanum sylvestre*. Bauh. *Hist.* *v.* 3. *p.* 1. 194. *f.*

A. tenuifolia altera. Clus. *Hist.* *v.* 1. 340. *f.*

Abrotanum campestre. Bauh. *Pin.* 136. Raii *Syn.* 190.

A. inodorum. Ger. *Em.* 1106. *f.* Lob. *Ic.* 769. *f.* Dalech. *Hist.* 939. *f.*

Wild Southernwood. Petiv. *H. Brit.* *t.* 20. *f.* 4.

On dry open sandy heaths, in Norfolk and Suffolk, rare.

About Barton mills and Eldon, Suffolk, plentifully; T. Willisell. Ray. About a mile north of Thetford, Norfolk. Mr. Crowe. On Icklingham heath, near Bury, Suffolk. Sir T. G. Cullum.

Perennial. August.

Root tapering. Whole herb without any aromatic or bitter flavour.

Stems at first prostrate, becoming more or less upright as the flowers appear, branched, leafy, straight and wand-like, smooth,

often reddish, near 2 feet high. *Leaves* irregularly and doubly pinnatifid, with narrow, linear, blunt segments; clothed beneath with close silvery hairs; smooth above; the radical ones numerous the first year, on long *footstalks*, spreading close to the ground. *Fl.* drooping, small, ovate, yellow, with a purplish *calyx*, forming numerous, slender, leafy *clusters*, at the ends of the stem and branches. *Calyx-scales* roundish, with a broad, membranous, shining, jagged margin. *Recept.* small, naked. *Florets* of the disk about 15, tipped with purple; of the circumference 2 or 3, awl-shaped, entire, yellow.

2. *A. maritima*. Drooping Sea Wormwood.

Leaves downy, pinnatifid; uppermost undivided. Flowers drooping, oblong, downy, sessile. Receptacle naked.

A. maritima. Linn. *Sp. Pl.* 1186. Willd. *v.* 3. 1833. *Fl. Br.* 864, α and β . Comp. ed. 4. 135. Engl. Bot. *v.* 24. *t.* 1706. Huds. 358. Hook. Scot. 239. Woodv. *t.* 122. Ehrh. *Pl. Off.* 90.

Absinthium marinum album. Raii *Syn. ed.* 2. 94. *ed.* 3. 188. Ger. Em. 1099. *f.*

A. marinum. Matth. *Valgr.* *v.* 2. 48. *f.* ? Camer. *Epit.* 455. *f.*

A. maritimum nostras. Dill. in Raii *Syn.* 189. Raii *Hist.* *v.* 3. 231.

β . *A. maritimum*, *Seriphio Belgico simile*, *latiore folio*, *odoris grati*. Raii *Syn. ed.* 2. 94. *ed.* 3. 188.

French Sea Wormwood. Petiv. *H. Brit. t.* 20. *f.* 3. Dill.

γ . *Absinthii maritimi species*, *latiore folio*. Raii *Syn. ed.* 2. 94. *ed.* 3. 189.

On the sea shore, or about the mouths of large rivers, in a muddy soil, frequent.

Perennial. August.

Root rather woody. *Herb* hoary with fine white cottony down, having a more agreeably aromatic resinous odour, and less bitter taste, than Common Wormwood. *Stems* erect or recumbent, woody, furrowed, solid, copiously and alternately branched, densely leafy. *Leaves* pinnatifid with 3-cleft segments, various in breadth and hoariness; the upper ones linear, undivided. *Fl.* in unilateral leafy clusters, all nearly sessile, drooping or pendulous, externally cottony, ovate-oblong, not hemispherical. Inner scales of the *calyx* almost naked, with a broad membranous edge. *Florets* tawny; those of the circumference very few. *Recept.* naked, small.

Our variety γ , found by Dale, was suspected by Ray himself to be either the same with β , or with the following species; so that it appears to have been, at any rate, very little known, and hardly entitled to rank even as a variety.

3. *A. gallica*. Upright-flowered Sea Wormwood.

Leaves downy, pinnatifid; radical ones capillary; uppermost undivided. Flowers erect, oblong, downy, partly stalked, of few florets. Receptacle naked.

A. gallica. Willd. *Sp. Pl.* v. 3. 1834. *Comp. ed.* 4. 135. *Engl. Bot.* v. 24. p. 1706, at the bottom. *Hook. Scot.* 239; in the quotation, for *drooping* read *erect*.

A. maritima. *Engl. Bot.* v. 14. t. 1001. *Fl. Br.* 864, γ.

Absinthium seriphium tenuifolium marinum narbonense. *Dill. in Raii Syn.* 189. *Bauh. Hist.* v. 3. p. 1. 177. f.

About the banks of large rivers near the sea, in a muddy soil.

Perennial. *August*.

This has much of the habit of the preceding, and like that varies in the degree of hoariness, and in the breadth of its foliage; but the radical leaves are usually more narrow, almost capillary; and when in bloom the two species differ conspicuously, the flowers of the present being more abundant and crowded, partially stalked, and all of them upright. In their sensible qualities there seems little difference.

4. *A. Absinthium*. Common Wormwood.

Leaves in many deep segments, clothed with close silky down. Flowers drooping, hemispherical. Receptacle hairy.

A. Absinthium. *Linn. Sp. Pl.* 1188. *Willd. v.* 3. 1844. *Fl. Br.* 864. *Engl. Bot.* v. 18. t. 1230. *Woodv. t.* 120. *Hook. Scot.* 239.

Apsinthium n. 124. *Hall. Hist.* v. 1. 53.

Absinthium. *Matth. Valgr. v.* 2. 47. f. *Camer. Epit.* 452. f. *Trag. Hist.* 335. f.

A. vulgare. *Raii Syn.* 188. *Dalech. Hist.* 943. f. *Fuchs. Hist.* 1. f. *Ic.* 2. f.

A. latifolium sive ponticum. *Ger. Em.* 1096. f.

Αψιθιον. *Diosc. Ic. t.* 16.

Common Wormwood. *Petiv. H. Brit. t.* 20. f. 1.

In waste ground, and about villages frequent.

Perennial. *August*.

Root woody, branched at the crown, with numerous fibres below. Whole herb covered with close silky hoariness, intensely bitter, to a proverb, with a peculiar, strong, aromatic, not disagreeable odour. Stems numerous, bushy, about a foot high, furrowed, leafy. Leaves alternate, doubly pinnatifid, with broadish, bluntish, entire segments, rather greener on the upper side; lower ones on long footstalks; upper on shorter, broader, somewhat winged ones. Fl. in aggregate leafy clusters, stalked, drooping, hemispherical, of numerous, pale yellow, or buff, florets.

Styles very deeply cloven. *Recept.* convex, clothed with fine upright hairs.

Sometimes the *leaves* which accompany the flowers are much larger and broader than usual, and most of them undivided. Such a variety has been sent me for *A. cærulescens*, from Gamlingay, near Cambridge; but it has no relationship to that species.

Common Wormwood is a powerful bitter, much extolled by Haller, on various authorities, as a stomachic, and recommended by him for keeping off fits of the gout, for which it is said to have served the Emperor Charles the Fifth. The plant is thought to drive away insects from clothes and furniture, for which purpose it is often laid into drawers and chests in the country. The vegetable alkali of the shops has been usually procured from this herb, and called Salt of Wormwood, though retaining none of its peculiar qualities.

5. *A. vulgaris*. Mugwort.

Leaves pinnatifid, flat, cut; downy beneath. Clusters simple. Flowers ovate. Receptacle naked.

A. vulgaris. Linn. *Sp. Pl.* 1188. Willd. *v.* 3. 1845. *Fl. Br.* 865. *Engl. Bot.* *v.* 14. *t.* 978. *Woodv. t.* 121. *Hook. Scot.* 240. *Bull. Fr. t.* 350. *Raii Syn.* 190. *Bauh. Hist. v.* 3. *p.* 1. 184. *f. Dalech. Hist.* 950. *f.*

A. n. 130. *Hall. Hist. v.* 1. 56.

Artemisia. *Trag. Hist.* 344. *f.* *Brunf. Herb. v.* 2. 83, *by mistake* 41, *f.* *Matth. Valgr. v.* 2. 202. *f.* *Camer. Epit.* 595. *f.*

A. mater herbarum. *Ger. Em.* 1103. *f.*

A. latifolia. *Fuchs. Hist.* 44. *f.*

Mugwort. *Petiv. H. Brit. t.* 20. *f.* 5.

In waste ground, about hedges, and in the rough borders of fields, common.

Perennial. *August*.

Root woody. *Stems* 3 or 4 feet high, erect, branched, paniced, leafy, furrowed, smooth, often reddish. *Leaves* alternate, deeply pinnatifid and cut, somewhat lyrate; dark green and smooth above; downy and snow-white underneath; the lower ones stalked; upper sessile. *Clusters* upright, leafy, simple. *Fl.* more or less inclining, or drooping, partly sessile, variously disposed, ovate, woolly. *Florets* reddish or brown; in the disk not numerous; in the margin 5, very slender. *Recept.* naked, small.

This species, weakly aromatic and bitterish, has, from remote antiquity, been esteemed good in certain obstructions, for which Ray says it is much used. Whatever may be its supposed efficacy, the sensible qualities are but slight, and its virtues are rather traditionary than certain. The cottony covering of the

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herbage, separated by rubbing, makes the *Moxa* of the Japanese, a famous material for performing actual cautery in that country.

†6. *A. cærulescens*. Blueish, or Lavender-leaved Mugwort.

Leaves hoary; most of them lanceolate, undivided, tapering at the base; lower ones variously divided. Flowers erect, cylindrical. Receptacle naked.

A. cærulescens. *Linn. Sp. Pl.* 1189. *Willd. v.* 3. 1847. *Fl. Br.* 866. *Engl. Bot. v.* 34. *t.* 2426. *Huds.* 359.

A. marina. *Ger. Em.* 1104. *f.* *Lob. Ic.* 765. *f.* *Dalech. Hist.* 951. *f.* *Absinthium marinum*. *Matth. Valgr. v.* 2. 49. *f.* *Camer. Epit.* 455, 456. *f., f.*

A. maritimum lavendulæ folio. *Bauh. Pin.* 139. *Moris. v.* 3. 7. *sect.* 6. *t.* 1. *f.* 5. *Duham. Arb. v.* 1. 24. *t.* 7.

A. latifolium rarius, Artemisiæ folio. *Column. Ecphr. v.* 2. 75. *t.* 76.

A. angustifolium. *Dod. Pempt.* 26. *f.*

On the sea coast; a very doubtful native.

Near Boston, Lincolnshire; Mr. Tofield. *Huds.* No other person has ever met with it, and the late Sir Joseph Banks repeatedly searched the neighbourhood of Boston in vain. In the isle of Wight. *Gerarde*. But it has not been found by recent botanists.

Perennial. *August, September*.

Plant rather shrubby, with round, slender, smooth, leafy branches, downy when young. *Leaves* of a blueish hoary hue, finely silky in an early state, especially beneath, all tapering at the base, and somewhat stalked; many of them obovate-oblong, obtuse, entire; floral ones smaller, and more linear; several about the lower part of the stem three-cleft, or pinnatifid. *Fl.* ovate-oblong, small, mostly erect, in copious, aggregate, leafy clusters or spikes. *Recept.* naked, small. From garden and exotic specimens.

394. GNAPHALIUM. Cudweed.

Linn. Gen. 419. *Juss.* 179. *Fl. Br.* 867.

Elichrysum. *Tourn. t.* 259. *Lam. t.* 693. *Gærtn. t.* 166.

Antennaria. *Gærtn. t.* 167.

Filago. *Linn. Gen.* 450. *Juss.* 179. *Tourn. t.* 259. *Gærtn. t.* 166.

Nat. Ord. Compositæ, ζ, nucamentaceæ. *Linn.* 49. *Corymbiferaæ, sect.* 1. *Juss.* 55.

Common Cal. roundish, imbricated; scales filmy, coloured, converging. *Cor.* compound; *florets* of the disk perfect, tubular, their limb 5-cleft; some destitute of stamens, often of corolla also, either marginal or interspersed in

the circumference of the disk; their corolla, if present, slender, or awl-shaped, mostly undivided. *Filam.* 5, capillary, short. *Anth.* in a cylindrical tube. *Germ.* obovate, angular. *Style* thread-shaped, the length of the floret. *Stigmas* 2, spreading, notched. *Seed-vessel* none, except the permanent shining calyx, variously coloured. *Seed* obovate, small, alike, and usually perfect, in all the florets. *Down* either simple, or variously feathery. *Recept.* naked.

Some few *florets*, in the very centre of the disk, are occasionally abortive. *Antennaria* of Gærtner has dioecious *flowers*, and a diversity of feathery *seed-down*; yet it is not a natural genus. In *Filago* the *florets* of the disk are described by Linnæus as 4-cleft, with 4 stamens only; but this is rarely, if ever, the case. There are many aberrations, as to the *florets* being more or less perfect, in different species, but nothing can be liable to more variations than this circumstance.

A vast genus, overburthened with species, among which there is great diversity of habit, and the exotic ones, chiefly African, undoubtedly require skilful investigation. The *roots* are annual, or more generally perennial. *Herbage* cottony. *Stem* herbaceous or shrubby, round, leafy. *Leaves* simple, undivided, and entire. *Fl.* corymbose, or capitate; yellow in the disk. *Calyx* yellow, red, white, brown, or blackish, never blue.

* *Calyx* yellow.

1. *G. luteo-album.* Jersey Cudweed.

Herbaceous. Leaves half-clasping, linear-oblong, wavy, woolly on both sides; lower ones blunt. Flowers densely tufted.

G. luteo-album. Linn. *Sp. Pl.* 1196. Willd. *v.* 3. 1871. *Fl. Br.* 867. *Engl. Bot.* *v.* 14. *t.* 1002. *Dicks. H. Sicc. fasc.* 5. 13. *Ehrh. Herb.* 118.

G. majus, lato oblongo folio. Bauh. *Pin.* 363. Pluk. *Almag.* 171. *Phyt. t.* 31. *f.* 6.

G. Plateau secundum. Clus. *Hist. v.* 1. 329. *f.*

G. oblongo folio. Ger. *Em.* 643. *f.*

G. ad Stœchadem citrinam accedens. Bauh. *Hist. v.* 3. *p.* 1. 160. *f.* *Filago n.* 147. Hall. *Hist. v.* 1. 64.

Elichrysum sylvestre latifolium, capitulis conglobatis. Raii *Syn.* 182.

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Helichrysum seu *Chrysocome* annua sylvestris, capitulis minoribus conglobatis. *Moris. v. 3. 88. sect. 7. t. 11. f.*

Chrysocome citrina supina latifolia italica. Barrel. Ic. t. 367.

Jersey Live-long. *Petiv. H. Brit. t. 18. f. 5.*

In dry sandy ground, in the south.

On dry banks and walls in Jersey, very common. *Sherard.* Between Hanxton and Little Shelford, Cambridgeshire, indubitably wild. *Rev. R. Relhan.*

Annual. *July, August.*

Root small and slender. *Herb* entirely covered with white cottony down. *Stems* generally several, from 3 to 12 inches high, unbranched, leafy; recumbent at the bottom; then upright. *Leaves* numerous, alternate, sessile, clasping the stem with their dilated base, oblong, undulated; the lower ones obovate at the extremity; upper acute. *Fl.* in crowded heads, on corymbose stalks. *Cal.* of a delicate, shining, pale yellow. *Marginal florets* often reddish, as are sometimes the few which compose the disk. *Recept.* tuberculated. *Seeds* fertile in all the florets. *Down* rough.

These *flowers* are of the kind termed *Everlasting*, but scarcely conspicuous enough to make a figure in winter nosegays, or to find a place in the flower-garden.

** *Calyx* white or reddish.

2. *G. margaritaceum.* American Cudweed. Pearly Everlasting.

Herbaceous. *Leaves* linear-lanceolate, sharp-pointed, alternate; loosely cottony on the upper side; densely underneath. *Stem* branched in the upper part. *Panicles* corymbose, level-topped.

G. margaritaceum. Linn. Sp. Pl. 1198. Willd. v. 3. 1881. Fl. Br. 868. Engl. Bot. v. 29. t. 2018. Dicks. H. Sicc. fasc. 8. 15.

G. americanum. Raii Syn. 182. Bauh. Hist. v. 3. p. 1. 162. f. Clus. Hist. v. 1. 327. f.

Filago n. 146. *Hall. Hist. v. 1. 64.*

American Live-long. *Petiv. H. Brit. t. 18. f. 3.*

In moist meadows, rare.

Plentifully near Bocking, Essex, Mr. Dale; but perhaps not wild.

Ray. On the banks of Rymny river, South Wales, for at least twelve miles; Mr. Lhwyd. *Dillenius.* By a rivulet in the heart of Wire forest, Worcestershire. *Rev. T. Butt.* At Longdon, near Litchfield. *Dr. Salt.*

Perennial. *August.*

Root somewhat creeping. *Stems* erect, 2 feet high, copiously leafy, solid, densely cottony; as is the under side of the *leaves*; while the upper is green, even, covered with a thin web of cotton ea-

sily rubbed off. *Fl.* numerous, corymbose, on cottony stalks, terminating the stem and branches. *Cal.* of a most pure, rather opaque, paper-like white, globose before it expands giving an elegant pearly aspect to the ample *panicles*, and remaining unchanged after gathering. Hence these *flowers* serve to decorate chimney-pieces in winter, especially in the country. In South Wales, where the plant, though reckoned of American origin, is to all appearance wild, they afford "Amaranthine wreaths" for the graves of the departed. The perfect *florets* of the disk are numerous; the half-ligulate ones of the circumference very few. *Seed-down* obtuse, rough. *Recept.* tuberculated.

3. *G. dioicum*. Mountain Cudweed.

Shoots procumbent. Stem unbranched. Corymb simple, terminal. Flowers dioecious. *Seed-down* feathery, various.

G. dioicum. *Linn. Sp. Pl.* 1199. *Willd. v. 3.* 1882. *Fl. Br.* 869. *Engl. Bot. v. 4. t. 267.* *Lightf.* 470. *t. 20. f. 1.* *Hook. Scot.* 240. *Fl. Dan. t. 1228.* *Bull. Fr. t. 325.*

G. montanum album. *Raii Syn.* 181.

G. longiore folio et flore. *Dill. in Raii Syn.* 182. *Bauh. Pin.* 263.

G. montanum purpureum et album. *Ger. Em.* 640. *f. Lob. Ic.* 482, 483. *f. f.*

Filago n. 157. *Hall. Hist. v. 1.* 67.

Elichrysum montanum, longiore et folio, et flore purpureo. *Garid. Prov.* 157. *t. 30.*

Lagopus. *Trag. Hist.* 332. *f.*

Pilosella minor. *Dod. Pempt.* 68. *f. Fuchs. Hist.* 606. *f. Ic.* 347. *f. Dalech. Hist.* 1098. *f.*

Antennaria dioica. *Gærtn. v. 2.* 410. *t. 167.*

Cat's-foot. *Petiv. H. Brit. t. 18. f. 4.*

In dry mountainous or heathy pastures.

On Newmarket heath; and on Stratton Strawless heath near Norwich. Frequent in the mountainous counties.

Perennial. *June, July.*

Roots with many long simple fibres. *Stems* solitary, simple, upright, generally from 4 to 6 inches high, cottony, leafy, accompanied at the base by several prostrate leafy runners, by which the plant is increased. *Leaves* scattered; obovate on the runners; lanceolate on the stems; green, smooth and naked above; very white and cottony beneath. *Fl.* 4 or 5, terminal, erect, simply corymbose, white, with more or less of a rose-coloured tint, everlasting, and very elegant; those on one root most perfect in their *anthers*, on another in their *pistils*, so that the plant is incompletely dioecious; but this varies, and the *seeds* of the latter kind are often abortive, as in most vegetables that increase much by root. The *calyx-scales* have a membranous termination, either rounded or acute. *Seed-down* partly rough, partly

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feathery and somewhat tufted. The redder *florets* in general have the most perfect *pistil*, without even the rudiments of *stamens*.

A very fine variety, almost twice the size of the common sort, with the upper surface of the *leaves* downy, at least while young, was gathered on Breeze hill in the isle of Skye, by the late Mr. J. Mackay, which some have thought a new species. But it seems a mere variety, becoming still larger in a garden, and having, as far as I can make out, no specific mark of distinction.

*** *Calyx* brown, and less ornamental.

4. *G. sylvaticum*. Highland Cudweed.

Stem simple, erect. Spike leafy, somewhat compound. Leaves lanceolate, tapering at the base, cottony on both sides.

G. sylvaticum. Linn. *Sp. Pl.* 1200. Willd. v. 3. 1884. *Fl. Br.* 869. *Engl. Bot.* v. 13. t. 913. Hook. Scot. 240. *Scop. Carn.* v. 2. 151. t. 56. *Wahlenb. Lapp.* 203 β .

Gnaphalium. *Fl. Dan.* t. 254.

G. norvegicum. Retz. *Prodr.* 193. Hænke in Jacq. *Coll.* v. 2. 21. Gunn. *Norveg.* 105.

Filago n. 148, variety from Mount Fouly. Hall. *Hist.* v. 1. 65.

Chrysocome lanuginosa. Dalech. *Hist.* 1125. f.

In pastures and thickets, on the Highland mountains of Scotland.

On mountains to the north of Blair in Athol, above Loch Erruch, and on Ben Wyvis, Ross-shire; but not in woods. Mr. J. Mackay.

Perennial. August.

Root with many long, simple, blackish fibres. Stem solitary, simple, from 3 to 12 inches high, leafy, cottony as well as both sides of the *leaves*, which are lanceolate, acute, tapering at the base into short *footstalks*. Fl. in a dense leafy spike, an inch or two long, at the top of the stem, slightly compound, or subdivided in the lower part; but its lower branches become multiplied by culture, forming stalked axillary spikes, along the upper half, or more, of the leafy stem. *Cal.* cylindrical, with numerous, oblong, round-pointed, naked scales, of a dark shining brown, nearly black, in the upper, or exposed, half; straw-coloured below. *Florets* yellowish; those of the circumference numerous, slender, tubular, with a short, undivided, ligulate border; of the disk few, regular, 5-cleft. *Seed-down* uniform, rough. *Recept.* minutely cellular. Some very dwarf alpine specimens bear solitary *flowers*.

The differences between this plant and the following seem pretty constant, in their respective natural situations, and there no person can mistake them. Cultivation renders the present species more luxuriant, with far more numerous and dispersed *flowers*, than the humble wild specimens of the Highland mountains;

but the upper surface of the *leaves* continues equally covered with cottony down; the *calyx* remains blacker, and the *florets* more dusky than in *G. rectum*. I concur therefore with the most eminent practical botanists, who have kept them distinct. In a wild state, though the *stem* of *G. sylvaticum* is often drawn up, to above the height of a foot, among bushes, the *spike* remains as compact, and nearly as short, as in the most exposed situations.

5. *G. rectum*. Upright Wood Cudweed.

Stem erect, paniced, many-flowered, leafy. Leaves linear-lanceolate, naked on the upper side; silky beneath.

G. rectum. *Fl. Br.* 870. *Engl. Bot.* v. 2. t. 124. *Willd. Sp. Pl.* v. 3. 1885. *Fl. Dan.* t. 1229. *Bauh. Hist.* v. 3. p. 1. 160. f. *Bertolon. Am. Ital.* 406.

G. sylvaticum. *Huds.* 360. *Hook. Scot.* 340 β . *Retz. Prodr.* 193. *Ehrh. Herb.* 50. *Wahlenb. Lapp.* 203 α .

G. anglicum. *Raii Syn.* 180. *Ger. Em.* 639. f.

G. anglicum vel belgicum, folio longiore. *Lob. Ic.* 482. f.

Filago n. 148. *Hall. Hist.* v. 1. 65.

Pseudoleontopodium. *Matth. Valgr.* v. 2. 535. f. *Dalech. Hist.* 1344. f.

Rhurkraut. *Trag. Hist.* 331; tallest f.

English Live-long. *Petiv. H. Brit.* t. 18. f. 6.

In groves, thickets and pastures, where the soil is light and sandy, or gravelly; rarely in corn fields.

Perennial. *August*.

This may be known from the last by its many-flowered, paniced, generally much taller, *stem*, but more certainly by the naked and very smooth upper side of its *leaves*, and their silvery under surface. The *calyx*, though brown, has a blush-coloured rather than black hue, and the *florets* are of a brighter yellow, though in structure like those of *G. sylvaticum*. In general *G. rectum* is $1\frac{1}{2}$ or 2 feet high, copiously branched, with abundance of not inelegant *flowers*; though I have dwarf specimens from the Hafod woods, Cardiganshire, not a foot in height, with the *inflorescence* as little branched as in *G. sylvaticum*. But the *flowers* are dispersed among the foliage, having their proper reddish hue, and the upper surface of the *leaves* is smooth and naked, while their backs, like the *stem*, are beautifully silvery. These specimens, accurately observed, cannot but remove all doubt.

6. *G. supinum*. Dwarf Alpine Cudweed.

Stem recumbent, quite simple, with a simple cluster of very few flowers. Leaves linear-lanceolate, somewhat cottony on both sides.

G. supinum. *Linn. Syst. Nat.* ed. 12. v. 3. 234. *Willd. Sp. Pl.* v. 3. 1888. *Fl. Br.* 871. *Engl. Bot.* v. 17. t. 1193. *Hook. Scot.* 240. *Dicks. H. Sicc. fasc.* 2. 17. *Wahlenb. Lapp.* 202.

SYNGENESIA—POLYG.—SUPERF. Gnaphalium. 417

G. alpinum. *Lightf.* 470. *t.* 20. *f.* 2. *Fl. Dan.* *t.* 332.

G. fuscum. *Scop. Carn.* *v.* 2. 152. *t.* 57.

G. alpinum nanum, seu pumilum. *Bocc. Sic.* 40. *t.* 20. *f.* 1. *Sm. Tour on the Continent, ed. 2. v.* 3. 101.

Filago n. 149. *Hall. Hist.* *v.* 1. 65.

Elichrysum alpinum minimum, capillaceo folio. *Tourn. Inst.* 454; according to his herbarium.

On the micaceous summits of the Highland mountains.

Near the top of Ben Lomond, plentifully, 1782.

Perennial. *July.*

Root slender, creeping, black. *Stems* from 2 to 4 inches long, very slender, quite simple, cottony, sparingly leafy, seldom quite erect, and often nearly prostrate; sometimes bearing only one solitary terminal flower; but most usually ending in a simple, lax cluster, of from 3 to 5 or 6 flowers, whose stalks are clothed with an abundant lax cottony web. *Leaves* very narrow, almost linear, an inch or two long, finely cottony on both sides; crowded about the root; scattered on the stem. *Cal.* rather ovate than cylindrical, generally spreading even while in flower, smooth; its scales brown, of a narrower and more acute form than either of the preceding, from which this species may, I think, by that mark be known, while the conspicuous *partial stalks* of the flowers, often considerably elongated, afford a good scientific distinction. There are indeed dwarf alpine states of *G. sylvaticum*, which approach the *supinum*, one of which is *G. supinum lavendulæ folio*, *Bocc. Mus.* 107. *t.* 85; but the dense tufted sessile flowers indicate the true *sylvaticum*. The *receptacle* of all these species is alike, slightly cellular. *Seed-down* rough. *Marginal florets* of the present less ligulate than in the others, and unequally notched. See *Engl. Bot. t.* 1193, and *Fl. Br.*

7. *G. uliginosum.* Marsh Cudweed.

Stem much branched, spreading. Leaves linear-lanceolate, cottony on both sides. Flowers in dense terminal tufts.

G. uliginosum. *Linn. Sp. Pl.* 1200. *Willd. v.* 3. 1891. *Fl. Br.* 872. *Engl. Bot. v.* 17. *t.* 1194. *Hook. Scot.* 241. *Fl. Dan. t.* 859. *Ehrh. Herb.* 99.

G. longifolium humile ramosum, capitulis nigris. *Raii Syn.* 181.

G. vulgare. *Ger. Em.* 639. *f.*

G. medium. *Bauh. Pin.* 263; according to his herbarium. *Haller.*

G. annuum serotinum capitulis nigricantibus, in humidis gaudens. *Moris. v.* 3. 92. *sect. 7. t.* 11. *f.* 14.

Filago n. 151. *Hall. Hist.* *v.* 1. 65.

F. minor. *Dod. Pempt.* 66. *f.* *Lob. Ic.* 481. *f.*

Long Cudweed. *Petiv. H. Brit. t.* 18. *f.* 7.

In sandy watery places, or where water has stood during winter.

Annual. *August.*

Root tapering, slender. *Stems* 4 or 5 inches long, generally numerous, branched, spreading or recumbent in every direction, many-flowered, densely cottony, leafy, sometimes single, with many small axillary branches. *Leaves* linear-lanceolate, on both sides much less cottony, alternate, spreading, tapering very gradually at the base. *Fl.* in dense, terminal, leafy tufts, small. *Cal.* ovate, of a shining yellowish brown, smooth. *Florets* yellow, all fertile. *Seed-down* rough. *Recept.* reticulated. The whole herb is remarkably tender, and when handled seems to hold together chiefly by its cottony covering.

8. *G. gallicum*. Narrow-leaved Cudweed.

Stem erect, branched. *Leaves* linear, revolute, acute. *Flowers* awl-shaped, axillary, tufted.

G. gallicum. *Huds.* 361. *Fl. Br.* 872. *Engl. Bot.* v. 33. t. 2369. *Willd. Sp. Pl.* v. 3. 1895. *Hook. Scot.* 241. *Dicks. H. Sicc. fasc.* 11. 10.

G. parvum ramosissimum, foliis angustissimis, polyspermon. *Raii Syn.* 181. *Pluk. Phyt.* t. 298. f. 2.

G. minimum alterum nostras, Stœchadis citrinæ foliis tenuissimis. *Pluk. Almag.* 172.

Filago gallica. *Linn. Sp. Pl.* 1312.

F. n. 156. *Hall. Hist.* v. 1. 67.

Grass Cudweed. *Petiv. H. Brit.* t. 18. f. 12.

In gravelly corn fields, but very rare.

Among corn, in sandy grounds, about Castle Heveningham, Essex, plentifully; Mr. Dale. *Ray.* On heaths in Derbyshire; Mr. Woodward. *Withering.*

Annual. *July, August.*

Root small, tapering. *Stems* one or more, a span high, erect, leafy, cottony; simple below; forked and subdivided in the upper part. *Leaves* scattered, nearly upright, an inch long, very narrow, acute, covered on both sides with thin, close, cottony, down. *Fl.* small, aggregate, sessile, forming round tufts at the forks of the stem, or in the bosoms of the leaves. *Cal.* ovate at the base, tapering upwards to a point; scales lanceolate, acute, green and downy, with a white, filmy border. *Florets* of the disk about 3, tubular and 5-cleft; of the circumference more numerous, very slender, but much the same in shape; all fertile. *Seed-down* rough. *Recept.* small, convex, granulated, remaining exposed after the seeds are gone, the *calyx* spreading and permanent.

9. *G. minimum*. Least Cudweed.

Stem erect, branched. *Leaves* lanceolate, acute, flat. *Flowers* conical, in lateral and terminal tufts.

SYNGENESIA—POLYG.-SUPERF. *Gnaphalium*. 419

G. minimum. *Fl. Br.* 873. *Engl. Bot. v.* 17. *t.* 1157. *Willd. Sp. Pl. v.* 3. 1896. *Hook. Scot.* 241. *Relh.* 324. *Raii Syn.* 181. *Lob. Ic.* 481. *f.* *Bauh. Hist. v.* 3. *p.* 1. 159. *f.*

G. montanum. *Huds.* 362. *With.* 715. *Hull v.* 1. 239.

G. minimum erectum, in arenosis nascens. *Moris. v.* 3. 92. *sect.* 7. *t.* 11. *f.* 3.

Filago montana. *Sibth.* 262. *Abbot* 189; but not of *Linn.*

F. minor. *Ger. Em.* 641. *f.*

F. arvensis. *Ehrh. Herb.* 100; not of *Linn.*

Least Cudweed. *Petiv. H. Brit. t.* 18. *f.* 11.

In barren sandy and gravelly ground, common.

Annual. *July*.

Root small and slender. *Herb* all over sparingly, not densely, cottony, of a greyish hue. *Stems* one or more, from 3 to 6 inches high, various in direction and luxuriance, slender, branched, leafy. *Leaves* scattered, numerous, small, sessile, lanceolate, flat, pointed, equally downy on both sides, from one-fourth to one-third of an inch long. *Fl.* 3 or more together, sessile, in small heads or tufts, partly terminal, partly at the sides, or in the forks, of the branches. *Cal.* ovate at the base, conical upwards; scales lanceolate, convex, acute, green, downy, with narrow membranous edges; inner ones entirely membranous. *Florets* yellow; those of the disk from 4 to 8, tubular, 5-cleft; of the circumference about as many, likewise tubular, extremely slender, minutely notched, with prominent *stigmas*. *Seed* perfect in both. *Down* rough. *Recept.* extremely small, tuberculated, surrounded by the permanent half-spreading calyx.

Linnæus did not know this species. *Hudson* and others took it for his *Filago montana*, a much larger and more woolly plant, not found in Britain. Both are natives of Switzerland, and appear to be confounded by *Haller* under his *Filago n.* 155; though the real *F. montana*, which is likewise a *Gnaphalium*, was what he principally intended. Hence he finds fault with *Lobel's* figure, as not well agreeing therewith, being in fact designed for a different plant, of which *Haller* had no suspicion.

10. *G. germanicum*. Common Cudweed.

Stem erect, proliferous. *Leaves* lanceolate. *Heads* globose, many-flowered, lateral as well as terminal. *Calyx*-scales bristle-pointed.

G. germanicum. *Huds.* 362. *Fl. Br.* 874. *Engl. Bot. v.* 14. *t.* 946. *Willd. Sp. Pl. v.* 3. 1894. *Hook. Scot.* 241. *Lond. t.* 43. *Relh.* 324. *Bauh. Hist. v.* 3. *p.* 1. 158. *f.*

G. minus, seu *Herba impia*. *Raii Syn.* 180.

Gnaphalium. *Fuchs. Hist.* 222. *f.* *Ic.* 126. *f.*

G. vulgare. *Matth. Valgr. v.* 2. 214. *f.* *Camer. Epit.* 606. *f.* *Lob. Ic.* 480. *f.* *Dalech. Hist.* 1115. *f.*

420 SYNGENESIA—POLYGAM.-SUPERF. Conyza.

G. annuum vulgare, capitulis rotundis sessilibus ad angulos floridum. *Moris. v. 3. 92. sect. 7. t. 11. f. 10.*

Filago germanica. *Linn. Sp. Pl. 1311. Sibth. 262. Abbot 189. Fl. Dan. t. 997.*

F. n. 153. Hall. Hist. v. 1. 66.

F. sive Herba impia. *Ger. Em. 642. f. Dod. Pempt. 66. f.*

Rhurkraut. *Trag. Hist. 331; lowest f.*

Childing Cudweed. *Petiv. H. Brit. t. 18. f. 9, 10.*

In pastures, fields, and waste ground, on a barren gravelly soil, common.

Annual. *July, August.*

Root small, tapering, tough, mostly crooked. *Stems* one or more, from 6 to 18 inches high, upright, straight, copiously leafy, flowering at the top, and sending forth, from below the head of flowers, two or more ascending branches, in like manner generally repeatedly proliferous; so that as the children rise above their parents, the name of *Herba impia* was sagely bestowed on the innocent and unconscious plant. The whole *herb* is grey and cottony. *Leaves* very numerous, regularly scattered over the stem and branches, erect, lanceolate, acute, wavy, equally woolly on both sides; clasping at the base. *Fl.* cylindrical, many together, in solitary, globular, dense, sessile heads, terminating the stem, as well as each branch in its turn. *Calyx-scales* smooth, lanceolate, bristle-pointed, flat, the outer ones with each a strong mid-rib, and a membranous margin. *Florets* yellow; those of the disk very few, regular, 5-cleft; of the circumference numerous, more or less ligulate; both kinds producing perfect seed, whose down is rough. *Recept.* small, tuberculated, surrounded by the spreading calyx, which, when old, turns of a reddish brown.

395. CONYZA. Spikenard.

Linn. Gen. 422. Juss. 180. Fl. Br. 875. Tourn. t. 259. Lam. t. 697. Gærtn. t. 166.

Nat. Ord. Compositæ, γ, discoideæ. Linn. 49. Corymbiferae, sect. 1. Juss. 55.

Common Cal. imbricated, ovate; scales acute, rigid, with spreading prominent points, especially the outer ones. *Cor.* compound; *florets* tubular; those of the disk numerous, funnel-shaped, with 5 equal segments, perfect, all fertile; of the circumference cylindrical, slender, with an oblique, short, ligulate, 3-cleft limb, no stamens, only a pistil, which is fertile. *Filam.* 5, capillary, very short. *Anth.* in a cylindrical tube. *Germ.* in all the florets oblong. *Style* thread-shaped, the length of the corolla. *Stigmas* 2, spreading, more slender in the marginal flo-

rets. *Seed-vessel* none, except the permanent, converging, dry calyx, beset with the prominent tips of the scales. *Seed* oblong, uniform and perfect in all the florets. *Down* simple, sessile. *Recept.* slightly convex, tuberculated.

A numerous, herbaceous or shrubby genus, of which our only British species is the type, many of the foreign species requiring examination. Gærtner remarks that if this genus had radiant marginal *florets*, it would not differ from *Aster*.

1. *C. squarrosa*. Plowman's Spikenard.

Leaves ovate-lanceolate, downy, crenate. Stem herbaceous, corymbose. Calyx-scales leafy, recurved.

C. squarrosa. *Linn. Sp. Pl.* 1205. *Willd. v. 3.* 1918. *Fl. Br.* 875. *Engl. Bot. v. 17. t.* 1195. *Hook. Scot.* 241. *Fl. Dan. t.* 622.

C. vulgaris. *Bull. Fr. t.* 342.

C. n. 135. *Hall. Hist. v. 1.* 59.

C. major. *Matth. Valgr. v. 2.* 222. *f. Camer. Epit.* 612. *f. Bauh. Hist. v. 2.* 1051. *f. Dalech. Hist.* 1044. *f.*

C. major altera. *Dod. Pempt.* 51. *f.*

C. Helenitis. *Cord. Hist.* 160, 2. *f.*

Baccharis monspeliensis. *Raii Syn.* 179. *Ger. Em.* 792. *f. Lob. Ic.* 574. *f.*

Montpelier Fleabane. *Petiv. H. Brit. t.* 18. *f.* 1.

In chalky or limestone countries frequent, or in woods on a marly soil.

Biennial. *July, August.*

Root tapering, fleshy, much subdivided under ground, though simple at the crown. *Herb* soft and downy, bitter, somewhat aromatic, with a portion of mucilage. *Stem* upright, angular, leafy, 2 or 3 feet high, terminating in a corymbose, leafy, many-flowered panicle. *Leaves* elliptic-lanceolate, veiny, variously crenate; radical ones large, tapering down into bordered foot-stalks; the uppermost often entire. *Fl.* dull yellow. *Tips of the calyx-scales* green, leafy, recurved.

The radical leaves bear some resemblance to those of Foxglove, but when rubbed, are readily distinguished by their aromatic scent.

The name of Flea-bane, more properly Fly-bane, has been applied to this plant; but the still more correct synonym of its Latinized Greek appellation would be Gnat-bane. The genus *Erigeron* is however the real Fly-bane, some of its viscid species, dipped in milk, being used in the south of Europe to catch the various little winged insects, so troublesome in warm climates.

396. ERIGERON. Flea-bane.

Linn. Gen. 422. *Juss.* 180. *Fl. Br.* 876. *Lam. t.* 681. *Gærtn. t.* 170.

Conyzella. Dill. Gen. 142. *t.* 8.

Conyzoides. Ibid.

Nat. Ord. Compositæ, γ, discoideæ. Linn. 49. *Corymbiferae, sect. 2. Juss.* 55. 7 following genera the same.

Common Cal. imbricated, ovate-oblong; scales linear, erect; the innermost longest, and all nearly equal. *Cor.* compound, radiated; *florets* of the disk numerous, perfect, funnel-shaped, regular, their limb in 5, sometimes said to be but 4, equal segments; those of the radius numerous, tubular at the base, the limb ligulate, tapering, nearly erect, either entire or slightly toothed. *Filam.* in the florets of the disk only, capillary, very short. *Anth.* in a cylindrical tube, simple. *Germ.* in all the florets, fertile, small, obovate, angular. *Style* thread-shaped. *Stigmas* 2, oblong, a little prominent, slightly spreading. *Seed-vessel* none but the converging calyx. *Seed* small, obovate. *Down* sessile, simple, rough, as long as the florets. *Recept.* flat, naked, slightly cellular.

Herbaceous, either annual or perennial, natives of Europe, North America, or Southern Africa. *Stem* erect. *Leaves* simple, either entire or toothed, roughish or downy. *Fl.* panicled or corymbose, rarely solitary, with very narrow, whitish or purplish, rays, and a yellow disk. The generic name, retaining its Greek termination, ought to be of the masculine gender, as well as *Tragopogon*, and I therefore, at the suggestion of my friend the Rev. Mr. Holme, venture to correct this error in the specific names.

*1. *E. canadensis.* Canada Flea-bane.

Stem hairy, panicled, many-flowered. *Leaves* lanceolate; lower ones toothed.

E. canadense. Linn. Sp. Pl. 1210. *Willd. v.* 3. 1954. *Fl. Br.* 876. *Engl. Bot. v.* 29. *t.* 2019. *Dicks. H. Sicc. fasc.* 10. 16. *Fl. Dan. t.* 1274.

E. n. 84. *Hall. Hist. v.* 1. 35.

Conyza canadensis annua acris alba, linariæ foliis. Raii Syn. 175. *Bocc. Sic.* 85. *t.* 46.

C. acris, flore albo. Mer. Pin. 29.

C. annua acris alba elatior, linariæ foliis. Moris. v. 3. 115. *sect.* 7. *t.* 20. *f.* 29.

Virga aurea virginiana irsuta annua, di flore pallido. Zan. Ist. 204. *t.* 78.

White Golden Rod. *Petiv. H. Brit. t. 16. f. 12.*

In cultivated, as well as waste ground, but in the opinion of Ray, not indigenous.

About London frequent. *Ray, Huds.* On the ballast hills of the Northumberland coast. *Mr. E. Robson.* On sandy ground, below the bridge at Neath, Glamorganshire, to all appearance perfectly wild. *Mr. Middleton.* On St. Vincent's rocks, Bristol. *With.*

Annual. *August, September.*

Root tapering, whitish. Stem wand-like, erect, angular, leafy, hairy, from 1 to 2 or 3 feet high, panicled, beset with innumerable, pale, yellowish flowers on short, lateral, compound, leafy stalks. Leaves alternate, lanceolate, acute, pale green, rough-edged, entire; the lower ones more or less toothed. Cal. finally spreading. Recept. convex, very obscurely reticulated. Seeds white, silky. Florets externally rough, or glandular.

2. *E. acris.* Blue Flea-bane.

Stem racemose. Stalks mostly single-flowered. Leaves lanceolate or tongue-shaped, sessile. Radius erect, scarcely taller than the seed-down.

E. acre. *Linn. Sp. Pl. 1211. Willd. v. 3. 1959. Fl. Br. 877. Engl. Bot. v. 17. t. 1158. Curt. Lond. fasc. 1. t. 60. Hook. Scot. 242. Dreves Bilderb. t. 27.*

E. n. 85. Hall. Hist. v. 1. 35.

E. quartum. Dod. Pempt. 641. f.

Aster arvensis cæruleus acris. Raii Syn. 175.

Conyza cærulea acris. Ger. Em. 484. f. Bauh. Pin. 265. Moris. v. 3. 115. sect. 7. t. 20. f. 25.

C. odorata. Dalech. Hist. 1045. f.

Amellus montanus æquicolorum. Column. Ecphr. v. 2. 25. t. 26.

Blue Flea-bane. *Petiv. H. Brit. t. 16. f. 4.*

In dry gravelly or chalky pastures.

Biennial. *July, August*; sometimes early in the spring.

Root with many stout fibres. Stem erect, straight, angular, leafy, 1 to 2 feet high, hairy like the rest of the herbage, often purple; somewhat corymbose at the top; racemose, with axillary, mostly simple, branches, all the way up. Leaves scattered, chiefly hairy at the edges; most of them sessile, oblong-lanceolate, and entire; radical ones largest, obovate, or tongue-shaped, somewhat toothed, tapering down into bordered footstalks. Fl. yellow in the disk, hoary from the prominent tawny seed-down; marginal florets tallest, narrow, blue, nearly erect. Seeds a little hairy.

There is some degree of acrimony in the whole plant, on which account Haller says it is given in Germany for disorders in the chest, as promoting expectoration; but surely there are many more efficacious medicines of that kind.

3. *E. alpinus*. Alpine Flea-bane.

Stem mostly single-flowered. Calyx hairy. Radius spreading, twice the length of the seed-down.

E. alpinum. Linn. *Sp. Pl.* 1211. Willd. v. 3. 1959. Dicks. *Tr. of Linn. Soc.* v. 2. 288. Fl. Br. 877. Engl. Bot. v. 7. t. 464. Hook. Scot. 242. Fl. Dan. t. 292.

E. n. 86. Hall. *Hist.* v. 1. 35.

Conyza cærulea alpina major; also *minor*. Bauh. *Pin.* 265. *Prodr.* 124. Moris. v. 3. 115.

Asteri montano purpureo similis, vel *Globulariæ*. Bauh. *Hist.* v. 2. 1047. f.

On moist rocks in the Highlands of Scotland.

On Ben Lawers. Mr. Dickson and Mr. J. Mackay.

Perennial. July.

Root somewhat woody, with many fibres. Stems from 4 to 6 inches high; sometimes, on the Alps of Switzerland, taller, with 3 or more flowers; but on the Scottish mountains mostly simple and single-flowered, leafy, striated, most hairy in the upper part, frequently purplish. Leaves scattered, sessile, lanceolate, dilated at the base, entire, hairy on both sides; the radical ones numerous, more obovate, and larger, tapering down into bordered *footstalks*, like the foregoing. Fl. twice the size of that species, generally solitary, erect, on a naked stalk. Cal. more or less hairy, sometimes as much so as in the following. Florets of the disk yellow; those of the radius numerous, light purple; the tube as long as the seed-down; limb the length of the tube, ligulate, narrow, spreading, very slightly curved upward. Stigmas of these florets more slender than those in the disk. Seeds of all the florets hairy, to all appearance perfect, but no experiments have been made to ascertain this point.

4. *E. uniflorus*. Pale-rayed Mountain Flea-bane.

Stem single-flowered. Calyx woolly. Radius erect, twice the length of the seed-down.

E. uniflorum. Linn. *Sp. Pl.* 1211. Fl. Lapp. ed. 2. 250. t. 9. f. 3. Willd. v. 3. 1960. Sm. *Tr. of Linn. Soc.* v. 10. 346. Comp. ed. 4. 137. Engl. Bot. v. 34. t. 2416. Fl. Dan. t. 1397. Bertolon. *Am. Ital.* 44.

E. n. 87. Hall. *Hist.* v. 1. 36.

On the mountains of Scotland.

On Ben Lawers, and on rocks by the river Almond, near Lindoch, 7 miles from Perth. Mr. G. Don.

Perennial. July.

This agrees in size with the smaller specimens of the last, with which it closely accords likewise in every part of the herbage, but I believe the stem very seldom, if ever, produces more than

one *flower*. The *calyx* is uniformly very densely and copiously woolly rather than hairy. *Florets* of the disk tipped with dark purple, or brown; those of the radius twice the length of the calyx or seed-down, more lanceolate than in the former, and more upright, their colour white, except the inside of their tubular part, and the *stigmas*. *Seeds* hairy. *Down* rough.

Linnæus for a long time confounded these two last species, so that his accounts of them, his synonyms, and even his figure of the present in *Fl. Lapp.*, made in Holland from a dried specimen, altogether require correction. Not having compared them in a living state, I trust to Haller, Bertoloni, and other able botanists who have, rather than to any theoretical opinion of my own. Nobody who has seen them can fail to distinguish them at first sight, whether their differences be permanently specific or not. Some have very unadvisedly confounded *E. alpinus*, in a luxuriant state, with our common *E. acris*. The *flowers* of the latter, always numerous, are not half so large, and the blue upright *florets* of the radius are but the length of the *seed-down*. The near approach of these two, and of many foreign species, to each other, though certainly distinct, may teach us caution with regard to *E. uniflorus*.

397. TUSSILAGO. Colt's-foot and Butter-bur.

Linn. Gen. 423. *Juss.* 181. *Fl. Br.* 878. *Tourn. t.* 276. *Lam. t.* 674. *Gærtn. t.* 170.

Petasites. Tourn. t. 258. *Gærtn. t.* 166.

Nat. Ord. see n. 396.

Common Cal. simple, cylindrical; scales from 15 to 20, linear, erect, close, parallel, equal. *Cor.* compound, various; *florets* in some all tubular, with 5, rarely but 4, equal segments, furnished with stamens and pistils which are more or less perfect, the latter chiefly fertile in the florets of the circumference, which in some species are ligulate and radiant, very narrow, without stamens. *Filam.* in the perfectly formed, seldom fertile, florets, awl-shaped, very short. *Anth.* either united, or converging, in the form of a tube. *Germ.* in all the florets obovate, short, often imperfect. *Style* thread-shaped. *Stigmas* 2, prominent; linear when perfect and efficient; thick and short when abortive. *Seed-vessel* none, except the hardly altered, finally reflexed, calyx. *Seed* obovate-oblong, compressed, rarely perfected. *Down* sessile, (not, as Linnæus says, stalked,) copious, simple, silvery, scarcely roughish, permanent. *Recept.* naked.

Herbaceous plants, with perennial, fleshy, widely creeping roots, no stem. *Leaves* simple, variously heart-shaped,

on radical footstalks, toothed or entire, most downy beneath. *Fl.* on simple or paniced, bracteated, radical stalks, yellow, white or purplish. Marginal *florets* either radiant, occasionally naked, or deprived of their corolla; or tubular, with the same part only 4-cleft, or otherwise imperfect. The plants always increase so much by root, that *seeds* are, in the Butter-bur tribe especially, very seldom ripened; hence great difficulty exists in ascertaining the true nature, or natural relative perfection, of the organs of the *flower*.

1. *T. Farfara*. Colt's-foot.

Stalks single-flowered, clothed with scaly bracteas. Flowers radiant. Leaves heart-shaped, angular and toothed.

T. Farfara. Linn. *Sp. Pl.* 1214. Willd. v. 3. 1967. *Fl. Br.* 878. *Engl. Bot.* v. 6. t. 429. *Curt. Lond. fasc.* 2. t. 60. *Woodv.* t. 13. *Hook. Scot.* 242. *Bull. Fr. t.* 329. *Dreves Bilderb.* t. 49. *Fl. Dan.* t. 595. *Ehrh. Pl. Off.* 187. *Lob. Ic.* 589. f.

Tussilago. Raii *Syn.* 173. *Ger. Em.* 811. f. *Matth. Valgr.* v. 2. 198. f. *Camer. Epit.* 590, 591. f. *Fuchs. Hist.* 140. f. *Ic.* 76. f. *Bauh. Hist.* v. 3. p. 2. 563. f. *Moris.* v. 3. 130. sect. 7. t. 12. f. 1. *Dalech. Hist.* 1051. f.

Petasites n. 143. *Hall. Hist.* v. 1. 62.

Ungula caballina. *Trag. Hist.* 418. f. *Brunf. Herb.* v. 1. 42. f. 41.

Bechium. *Tillands Ic.* 24. f. *Cord. Hist.* 93. 2. f.

Colt's-foot. *Petiv. H. Brit.* t. 17. f. 7, 8.

In moist shady situations, on a chalky or marly soil, common.

Perennial. *March, April.*

Root mucilaginous, bitterish, creeping horizontally, with many fibres. *Fl.* coming before the leaves, drooping in the bud, bright yellow, about an inch broad; their rays spreading, copious, very narrow; each flower on a simple, round, woolly, radical stalk, scaly with numerous, reddish, smooth, scattered bracteas, crowded under the flower, like an exterior calyx. *Leaves* erect, on furrowed channelled footstalks, heart-shaped, slightly lobed, copiously and sharply toothed; very smooth, of a slightly glaucous green, above; pure white and densely cottony, with prominent veins, beneath; when young they are revolute, and thickly enveloped in cottony down.

The cotton, impregnated with salt-petre, makes excellent tinder.

The leaves, either smoked like tobacco, or taken in infusion, are reputed good for coughs, whence the generic name.

2. *T. Petasites*. Butter-bur.

Panicle dense, ovate-oblong. Flowers flosculous. Leaves heart-shaped, unequally toothed, three-ribbed at the base.

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T. Petasites. *Linn. Sp. Pl.* 1215. *Willd. v. 3.* 1971. *Fl. Br.* 880. *Engl. Bot. v. 6. t.* 431. *Curt. Lond. fasc. 2. t.* 59. *Hook. Scot.* 242. *Fl. Dan. t.* 842. *DeCand. Fr. v. 4.* 158. *Bull. Fr. t.* 391. *Ehrh. Pl. Off.* 197.

T. major. *Matth. Valgr. v. 2.* 199. *f. Camer. Epit.* 592. *f.*

Petasites. *Raii Syn.* 179. *Ger. Em.* 814. *f. Trag. Hist.* 415. *f. Fuchs. Hist.* 644. *f. Ic.* 370. *f. Dod. Pempt.* 597. *f. Dalech. Hist.* 1053. *f. Tillands Ic.* 150. *f.*

P. n. 138. *Hall. Hist. v. 1.* 61.

Butter-bur. *Petiv. H. Brit. t.* 15. *f.* 11, 12.

β . *Tussilago hybrida*. *Linn. Sp. Pl.* 1214. *Fl. Br.* 879. *Engl. Bot. v. 6. t.* 430.

T. Petasites foemina. *Willd. Sp. Pl. v. 3.* 1971. *Br. in Ait. H. Kew. v. 5.* 36. *Hook. Lond. t.* 129.

Petasites n. 140. *Hall. Hist. v. 1.* 61.

P. major, *floribus pediculis longis insidentibus*. *Dill. in Raii Syn.* 179. *Hort. Elth. 309. t.* 230.

P. major et vulgaris prima. *Rupp. Jen. ed.* 1. 180.

P. flore minore, elatior. *Rupp. Jen. ed. Hall.* 190.

P. flosculis in medio majoribus, reliquis minoribus. *Buxb. Hallens.* 258.

In moist boggy meadows, about rivulets, and the margins of rivers, common. β occurs in the same places, but very rarely.

Perennial. *April.*

Root thick and fleshy, creeping extensively, with many long fibres; its reputed virtues sudorific and antipestilential; externally applied it is recommended for malignant sores and ulcers, and the strong aromatic scent, as well as bitter flavour, indicate some powerful qualities, however what is so easily obtainable may be neglected in modern practice. The *leaves* are perhaps the largest of any British plant; when full grown, long after the flowering, they are often a yard in diameter, standing on very thick upright *footstalks*, and of a rounded heart-shaped figure, cut away at the base close to the lateral ribs, doubly or unequally toothed along the margin; dark green above; downy, not very white, beneath. *Flower-stalks* stout, hollow, clothed with concave tumid *footstalks*, bearing rudiments of leaves in their lower half, which gradually become lanceolate *bracteas* above. *Fl.* very numerous, in a dense, ovate, or oblong, *panicle*, constituting a true *thyrsus*, all flosculous or discoid, flesh-coloured, always destitute of any radiant or ligulate *florets*; their *stalks* a little downy; *bracteas* and *calyx* smooth. All the *florets* are tubular, regularly 5-cleft, mostly perfect in structure, except a thickness in the *stigma*, indicative of a defect in that organ, and except a few found occasionally towards the centre, whose *anthers* are imperfect or wanting, and which alone ever produce good seeds.

β differs in no respect from the common *Petasites* in its foliage, but the *panicles* and their *stalks* are twice as tall when in seed,

making a very elegant appearance. The *flowers* are essentially different; *florets* all tubular, generally with 5 segments, occasionally with 4 only, most of them destitute of *stamens*, but with perfect *germen*, *style* and *stigmas*, the latter being slender and awl-shaped. Their *seeds*, crowned with silvery, simple, sessile, roughish *down*, are all perfect, at least in appearance. In the centre of the *disk* are one or two, scarcely more, *barren florets*, having a more conspicuous reddish *corolla*, with 5 segments, and as many *stamens*, whose *anthers* are very slightly, if at all, combined, and whose *stigmas* are short and thick, totally inefficient, there being only the rudiments of a *germen*, and no *seed*. This plant, known by the name of *T. hybrida*, I ventured to hint in *Engl. Bot.* 430, published in 1797, might be the true fertile plant of *T. Petasites*. It is more correct to term it a variety of the latter, in which the fertile, or seed-bearing, organs predominate. As to the actual perfecting of the *seed*, we know nothing, the Butter-bur being one of those herbs whose immoderately prolific *roots*, like those of Mints, hardly allow them to produce *seeds*. We therefore can judge of their apparent perfection only. I did not know that my supposition had been anticipated by the ingenious and acute Ehrhart, whose remarks on several species of *Tussilago*, to the same effect, I have recently found in his *Beiträge*, vol. iii. p. 64—66. My ideas were thought so bold and unauthorised in England, that I have ever since, till now, confined them to a mere suggestion. They have nevertheless been adopted, in their original form, by the late Prof. Willdenow and by Dr. Hooker, but without reference to me. Willdenow mentions Ehrhart's name, and cites Hoppe's *Taschenbuch*, for the year 1803; not having access, as it seems, to my *English Botany*, though he generally, after the *Didynamia* class, refers to the *Fl. Brit.* where he might have found the same remark. The observations and opinions of these excellent botanists give the more support to my theory, as being independent of it, and I no longer scruple to reduce *T. hybrida* to *Petasites*, not as its proper fertile, or seed-bearing, individual, but as a casual variety. Several foreign species are in the same predicament with regard to others. See *Engl. Bot.* 431, and *Willd. Sp. Pl.* v. 3. 1973; also DeCandolle's *Fl. Française*, v. 4. 158, where the same opinion is followed.

398. SENECEO. Groundsel or Ragwort.

Linn. Gen. 424. *Juss.* 181. *Fl. Br.* 881. *Tourn. t.* 260. *Lam. t.* 676. *Gærtn. t.* 166.

Jacobæa. Tourn. t. 276. *Gærtn. t.* 170.

Nat. Ord. see *n.* 396.

Common Cal. double; the inner rather conical, abrupt, of numerous, equal, parallel, linear, contiguous scales;

outer of a smaller number of minute imbricated scales, at the base of the former, and, like those, all withered, mostly black, at the tips. *Cor.* compound, taller than the calyx; *florets* of the disk numerous, all perfect, tubular, with 5 equal segments; those of the radius ligulate, slightly toothed, various in length, without stamens, sometimes wanting. *Filam.* slender, short. *Anth.* in a cylindrical tube. *Germ.* in all the florets, obovate, small. *Style* thread-shaped, the length of the stamens. *Stigmas* 2, oblong, spreading. *Seed-vessel* none, but the unchanged, finally spreading, calyx. *Seed* obovate, rather angular. *Down* sessile, capillary, roughish. *Recept.* naked, tessellated, slightly convex.

A very extensive genus, of caulescent, herbaceous or shrubby plants, natives chiefly of Europe or Africa, though found also in America, and very sparingly in China and Japan. *Stem* erect, leafy. *Leaves* either variously pinnatifid, or undivided, serrated, smooth or downy. *Fl.* corymbose; yellow in the disk, and mostly so in the radius; rarely purple in one or the other. The black withered tips of the *calyx-scales* afford an obvious and constant generic character.

* *Flowers without rays.*

1. *S. vulgaris.* Common Groundsel, or Simson.

Flowers dispersed, without rays. Leaves pinnatifid, toothed, obtuse, smoothish; clasping at the base.

S. vulgaris. Linn. *Sp. Pl.* 1216. Willd. v. 3. 1973. *Fl. Br.* 881. *Engl. Bot.* v. 11. t. 747. *Curt. Lond. fasc.* 1. t. 61. *Hook. Scot.* 243. *Fl. Dan.* t. 513. *Bull. Fr.* t. 197. *Dreves Bilderb.* t. 26. *Raii Syn.* 178.

S. n. 58. *Hall. Hist.* v. 1. 25.

Senecio. *Fuchs. Hist.* 286. f. *Ic.* 162. f. *Matth. Valgr.* v. 2. 476. f. *Dalech. Hist.* 575. f. *Lob. Ic.* 225. f. *Trag. Hist.* 285. f.

Erigerum. *Ger. Em.* 278. f.

E. minus. *Dod. Pempt.* 641. f.

Verbena foemina. *Brunf. Herb.* v. 1. 120. f. excellent.

Common Groundsel. *Petiv. H. Brit.* t. 17. f. 5.

In cultivated or waste ground, on dry banks, and the tops of walls, every where.

Annual. *At all seasons.*

Root simple, with many long fibres. *Herb* various in size, mostly smooth; sometimes loosely woolly or downy, though very sparingly. *Stem* erect, more or less branched, leafy, round, striated, pale or purplish. *Leaves* bright green, slightly succulent, blunt-

ish ; the lower ones mostly obovate, jagged, tapering into *foot-stalks* ; upper sessile, clasping the stem, pinnatifid and toothed. *Fl.* on corymbose, terminal and axillary, leafy branches, consisting of a yellow disk only, without rays, of no attractive aspect or scent. *Cal.* smooth, striated. The *seed-down* forms small white balls, soon blown away.

Birds kept in cages are fed with the young buds and leaves, which have a saltish herbaceous flavour. Haller suggests a degree of affinity between this genus and the Succory tribe ; but I do not perceive it either in their structure or qualities.

** *Fl. with speedily revolute rays.*

2. *S. viscosus.* Stinking Groundsel.

Rays revolute. Leaves pinnatifid, viscid. Outer calyx lax, almost as long as the inner. Stem with many spreading branches.

S. viscosus. *Linn. Sp. Pl.* 1217. *Willd. v. 3.* 1984. *Fl. Br.* 882. *Engl. Bot. v. 1. t. 32.* *Hook. Scot.* 243. *Ehrh. Herb.* 70.

S. n. 60. *Hall. Hist. v. 1.* 26.

S. hirsutus viscidus major odoratus. *Raii Syn.* 178. *Bauh. Hist. v. 2.* 1042. *f.*

S. hirsutus viscidus graveolens. *Dill. Elth.* 347. *t. 258. f.* 336.

Erigerum tomentosum. *Ger. Gm.* 278. *f. not descr.*

E. tomentosum alterum. *Lob. Ic.* 226. *f.*

E. majus. *Dod. Pempt.* 641. *f.*

Cotton Groundsel. *Petiv. H. Brit. t. 17. f.* 6.

In waste ground, on a chalky or sandy soil.

On the fen banks in the Isle of Ely. *Ray.* At Gamlingay, Meppole, and Chatteris, Cambridgeshire. *Relhan.* Near Baldon, Oxfordshire. *Sibthorp.* By the sea side at New Haven, and in the King's park, Edinburgh ; also about the chalk-pits at Dartford, Kent.

Annual. *July—October.*

Whole *herb* larger in all its parts than the preceding, downy, soft and glutinous to the touch, with a strong disagreeable smell. *Stem* generally more spreading. *Leaves* deeply, and in some measure doubly, pinnatifid, with bluntish irregular notches, or teeth. *Fl.* on terminal, solitary or aggregate, stalks. *Cal.* hairy, and very glutinous ; the outer scales few, lax, long and narrow. *Cor.* bright yellow ; disk convex ; radius of several ligulate, linear, 5-toothed *florets*, soon revolute after their expansion. All the *florets* are fertile. *Seed-down* rough.

3. *S. lividus.* Green-scaled Groundsel.

Rays revolute. Leaves clasping the stem, lanceolate, pin-

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natifid and toothed. Outer calyx short, with sharp, not discoloured points.

S. lividus. *Linn. Sp. Pl.* 1216. *Willd. v. 3.* 1983. *Comp. ed.* 4. 137. *Engl. Bot. v. 35. t.* 2515. *Hook. Scot.* 243.

S. corollis revolutis, foliis amplexicaulibus lanceolatis dentatis, squamis calycinis brevissimis intactis. *Linn. Hort. Ups.* 261.

Senecio. *Linn. It. Scan.* 225.

Jacobæa annua, senecionis folio, fœniculi odore. *Till. Pis.* 86. *t.* 28. *f. 2. From Prof. Arduino.*

On barren heaths, and newly enclosed moor land in the North.

At Sneaton, near Whitby, Yorkshire. *Mr. Middleton*. At Thirkleby, near York. *Sir T. Frankland, Bart.* About Newcastle, a common weed. *Mr. Winch*. On the hill of Tenhaven, Angusshire, abundantly; *Mr. G. Don. Hooker*. On hills between Norwich and Thorpe. In the woods of Blaize Castle, near Bristol.

Annual. *September, October.*

Taller than either of the former, having more the habit of *S. sylvaticus*. Root of several stout fibres. Herb downy, rather glutinous, with a slightly aromatic odour, compared by Tilli to the scent of fennel, something of which remains in the dried specimens. Stem erect, copiously leafy, paniced and corymbose at the top, with numerous yellow flowers, whose disk is small, the rays short, gradually becoming revolute. Leaves variously pinnatifid; remarkably dilated, rounded, and clasping, at their base; the segments toothed; bluntish in the lower ones; acute in the upper, which gradually diminish into narrow linear bracteas. Calyx-scales fringed at the tips, not blackened and withered as in perhaps every other *Senecio*; but green or pale, at least while in blossom; though they subsequently assume a withered appearance. The outer ones are very small, but acute. Seeds furrowed, slightly silky. Down roughish.

4. *S. sylvaticus*. Mountain Groundsel.

Rays revolute. Leaves sessile, pinnatifid, lobed and toothed. Outer calyx short, with bluntish discoloured tips.

S. sylvaticus. *Linn. Sp. Pl.* 1217. *Willd. v. 3.* 1985. *Fl. Br.* 882. *Engl. Bot. v. 11. t.* 748. *Hook. Scot.* 244.

S. viscosus. *Fl. Dan. t.* 1230.

S. viscosus β . *Huds.* 365.

S. n. 59. *Hall. Hist. v. 1.* 25.

S. minor, latiore folio, sive montanus. *Dill. in Raii Syn.* 178. *Elth.* 347. *t.* 258, *f.* 337.

Jacobæa senecionis folio incano perennis. *Rupp. Jen. ed. Hall.* 177. *t.* 3; but not of *Ray's Hist. v. 1.* 285.

In bushy heathy places, on a gravelly or sandy soil.

Annual. *July.*

Root and herbage so like the last, which is perhaps equally common, that the two species have, by most botanists, been confounded. They are both downy, unpleasantly scented, and agree in their upright, wand-like, furrowed *stem*, clothed with numerous leaves, beset with small, short, axillary branches, paniced, corymbose, and many-flowered, at the summit, 3 or 4 feet in height. But the *leaves* of the present are not so remarkably dilated at the base, nor so much subdivided. The *flowers* are similar, except that the *calyx* of *S. sylvaticus* has, in all its scales, the black withered tips characteristic of the genus, and the outer ones, besides that difference, are much shorter, closer, blunter, and broader, than in *S. lividus*.

The *perennial* plant, of which Ruppianus adopts the definition from Ray, is our *S. tenuifolius*.

*** *Fl. with spreading rays. Leaves pinnatifid.*

*5. *S. squalidus*. Inelegant Ragwort.

Rays spreading, elliptical, entire. Leaves smooth, pinnatifid, with distant, and somewhat linear, segments.

S. squalidus. Linn. *Sp. Pl.* 1218. Willd. v. 3. 1991. *Fl. Br.* 883. *Engl. Bot.* v. 9. t. 600. Bertolon. *Am. Ital.* 45.

S. corollis radiantibus planis calyce longioribus integris, foliis pinnatifidis: laciniis lanceolatis distantibus. Linn. *Hort. Ups.* 260.

S. chrysanthemifolius. Bivona Bernardi *Cent.* 2. 52; from the author.

Jacobæa sicula, chrysanthemi facie. Bocc. *Sic.* 66. t. 36.

J. chrysanthemi facie. Cupan. *Panph. ed.* 2. t. 162. f. 1.

J. minor, abrotani foliis. Barrel. *Ik.* t. 262. f. 2.

On walls at Oxford.

Very plentiful on almost every wall in and about Oxford, where it was first noticed by Sir Joseph Banks. Dillenius sent seeds to Linnæus, but whether he gathered them from the Oxford garden, or from the walls of the town, no memorial appears. It is not improbable that the plant was originally naturalized there from the garden, being really a native of Sicily.

Annual. June—October.

Root fibrous. *Stem* erect, branched, leafy, smooth, or a little hairy, 12 or 18 inches high. *Leaves* nearly or quite smooth, bright green, either sessile, or somewhat clasping, all variously pinnatifid, jagged, and sharply toothed; the lower ones stalked, and less divided; the upper often much dilated and rounded at the base; the under side often acquires a violet hue. *Fl.* loosely corymbose, terminal, erect, not numerous, accompanied with small awl-shaped *bractæas* on the partial stalks. *Cal.* broad, almost hemispherical, smooth; the inner scales pale at the point; outer rather few, small, lax, tipped with black. *Florets* all of a bright golden yellow; those of the disk very numerous;

of the radius near a dozen, more or less, oval, broad, entire at the extremity, for the most part spreading, but as they fade they become revolute. *Seeds* a little silky. *Down* roughish. The scent of the *herb* is like Tansy or Mugwort.

Baron Bivona Bernardi has sent, along with specimens agreeing precisely with our Oxford plant, others with perfectly undivided, entire or toothed, *leaves*, always indeed clasping the *stem*; such as are figured in Bonanni's edition of Cupani, *t.* 168. *f.* 1; *t.* 161. *f.* 2; and *t.* 160. *f.* 1; as well as in Cupani's original publication, one of the rarest books on Botany. Our plant does not show any disposition to vary in this extraordinary manner, whatever may be the case in Sicily. The above authority however is indisputable, nor are intermediate specimens wanting, which strongly confirm it. The Baron had no means of knowing that his plant was *S. squalidus* of Linnæus, nor does it deserve so opprobrious a name.

6. *S. tenuifolius*. Hoary Ragwort.

Rays spreading, oblong. Leaves pinnatifid, somewhat revolute; paler and shaggy beneath. Stem erect, loosely cottony.

S. tenuifolius. *Jacq. Austr. t.* 278; *from himself*. *Willd. Sp. Pl. v.* 3. 1996. *With.* 723. *Fl. Br.* 884. *Engl. Bot. v.* 8. *t.* 574. *Sibth.* 253. *Relh.* 328.

S. erucifolius. *Huds.* 366. *Curt. Lond. fasc.* 5. *t.* 64. *Abbot* 182.

S. n. 62, δ . *Hall. Hist. v.* 1. 27.

Jacobæa senecionis folio incano perennis. *Raii Syn.* 177. *Hist. v.* 1. 285.

Groundsel Ragwort. *Petiv. H. Brit. t.* 17. *f.* 3.

In woods, hedges, and by road sides, in the chalky or gravelly counties.

Perennial. *July, August.*

Root somewhat creeping, with long stout fibres. *Stem* erect, straight, unbranched, usually 2 or 3 feet high, leafy, furrowed, covered slightly with loose cottony down; corymbose at the top, with several bright yellow *flowers*, on bracteated stalks. *Leaves* numerous, alternate, deeply pinnatifid, sparingly toothed, sessile, often with several clasping lobes at the base; dark green and nearly smooth above; downy or cottony, often snow-white, beneath; their segments either flat or revolute, extremely various in width. Inner scales of the *calyx* much fewer than in any of the preceding, broader and flatter, with a membranous border, blackish at the tip; outer spreading, linear-lanceolate, pale at the point, and much resembling the *bracteas* immediately below them. *Florets* of the radius linear-oblong, minutely 3-toothed, revolute in fading. *Seeds* hairy. *Down* rough.

S. erucifolius of Linnæus, found by him in Scania, and described

in both editions of *Sp. Pl.*, though with wrong synonyms, is evidently distinct from this species, appearing to be *S. lividus*, rather than *sylvaticus*, to which latter it is referred in *Engl. Bot.* p. 574.

7. *S. Jacobæa*. Common Ragwort.

Rays spreading, oblong, toothed. Leaves doubly pinnatifid, somewhat lyrate, with spreading, toothed, smooth segments. Stem erect. Seeds of the disk silky.

S. Jacobæa. Linn. *Sp. Pl.* 1219. Willd. v. 3. 1997. *Fl. Br.* 885.

Engl. Bot. v. 16. t. 1130. Mart. *Rust.* t. 85. Hook. *Scot.* 244.

S. n. 62, α , β , γ . Hall. *Hist.* v. 1. 26.

S. major, sive *Flos Sancti Jacobi*. Matth. *Valgr.* v. 2. 477. f. Camer.

Epit. 870. f. Dalech. *Hist.* 575. f. 576. f.

Jacobæa. Ger. *Em.* 280. f. Lob. *Ic.* 227. f.

J. vulgaris. Raii *Syn.* 177. Bauh. *Hist.* v. 2. 1057. f.

Sancti Jacobi herba. Fuchs. *Hist.* 742. f. Brunf. *Herb.* v. 2. 56. f.

Flos Sancti Jacobi. Trag. *Hist.* 287. f.

Common Ragwort. Petiv. *H. Brit.* t. 17. f. 1.

In pastures, waste ground, and by road sides, very common.

Perennial. July, August.

Root rather fleshy. *Herb* for the most part quite smooth, of a deep shining green, sustaining uninjured the greatest drought, and most scorching heat, at least of our temperate climate. *Stem* upright, branched in a corymbose manner, about the height of the last, but rather more bushy, striated. *Leaves* alternate; lower ones stalked, broad, doubly pinnatifid, with wedge-shaped, spreading, notched, toothed segments; upper less compound, sessile, more acute, their lower segments crowded and clasping the stem. *Fl.* numerous, bright yellow, facing the sun, in terminal corymbose *panicles*, whose stalks are more or less cotony. *Calyx* nearly hemispherical, its scales tipped with black. *Disk* of many tubular florets; radius of several linear ligulate ones, toothed at the end, rolled back and tawny in decay. *Seeds* of the disk thickly clothed with short silky hairs; those of the radius smooth. *Down* of all rough.

The herbage is fetid when bruised, and generally remains untouched by cattle whilst any thing else is to be had, though often devoured entirely by the black- and yellow-ringed caterpillars of *Phalæna Jacobæa*. It has been recommended as an application for cancers, by the name of Swine's Cresses, which it bears in Yorkshire.

Sherard observed that the *radius* is sometimes wanting in sandy situations. The Rev. Mr. Holme found between Clayhithe and Horningsea, Cambridgeshire, a very extraordinary variety, in which the *calyx-scales* and *bractæas* are multiplied excessively, the *radius* obliterated, and the tumid *disk* apparently a mass of confusion.

8. *S. aquaticus*. Marsh Ragwort.

Rays spreading, elliptic-oblong. Leaves lyrate, serrated; the lowermost obovate and undivided. Seeds all smooth.

S. aquaticus. Huds. 366. Fl. Br. 885. Engl. Bot. v. 16. t. 1131.

Willd. v. 3. 1997. Hook. Scot. 244. Fl. Dan. t. 784.

S. n. 62, ε. Hall. Hist. v. 1. 27.

Jacobæa latifolia palustris sive aquatica. Raii Syn. 178.

J. latifolia. Bauh. Hist. v. 2. 1057. f.

J. barbareæ instar laciniata. Loes. Pruss. 129. t. 35.

Marsh Ragwort. Petiv. H. Brit. t. 17. f. 2.

In marshes and watery places, near rivers and brooks, common.

Perennial. July, August.

Akin to the last, of which Linnæus, Haller and others have considered it as a variety; while many have confounded herewith an Austrian and Swiss plant, *Jacobæa tertia, latifolia prima*, Clus. Hist. v. 1. 23. f; which is Haller's *Senecio* n. 63; and the *alpinus* of Linn. Suppl. 371, where all the synonyms are wrong. Our *aquaticus*, first distinguished and named by Hudson, is generally very smooth, rarely, in accidentally dry situations, a little cottony, of a lighter green than the preceding, and its leaves, though very variable, always much less divided; the lower ones stalked, ovate, nearly entire; upper pinnatifid in a lyrate manner, having a few parallel lobes at the base, and a large, ovate, serrated termination. Fl. few and larger, though of the same golden hue, with more elliptical radiant florets. Seeds of the radius, as well as of the disk, destitute of the hairy or silky clothing which is nearly universal in the whole genus, and which essentially distinguishes the seeds of the disk of *S. Jacobæa* from the present, whose marginal seeds only have a slight roughness at the edges, near the top. The scales of the outer calyx moreover are very few. Mr. Woodward remarked that the radius is sometimes wanting. The lower part of the stem often assumes a violet hue, but such is frequently the case with *S. Jacobæa*.

**** Fl. radiant. Leaves undivided.

9. *S. paludosus*. Great Fen Ragwort: Bird's-tongue.

Rays spreading, toothed. Flowers corymbose. Leaves lanceolate, tapering, sharply serrated, somewhat cottony beneath. Stem perfectly straight, hollow.

S. paludosus. Linn. Sp. Pl. 1220. Willd. v. 3. 2002. Fl. Br. 886.

Engl. Bot. v. 10. t. 650. Tour on the Continent, ed. 2. v. 1. 48.

Fl. Dan. t. 385.

S. n. 66. Hall. Hist. v. 1. 28.

Virgæ aureæ, sive Solidagini angustifoliæ affinis, Lingua avis Dalechampii. Raii Syn. 176. Bauh. Hist. v. 2. 1063. f.

Lingua major. Dalech. Hist. 1037. f.

436 SYNGENESIA—POLYGAM.-SUPERF. Senecio.

Conyza aquatica maxima serratifolia. *Thal. Harcyn.* 21. t. 3.

C. palustris serratifolia. *Ger. Em.* 483. f.

Marsh Golden Rod. *Petiv. H. Brit.* t. 16. f. 8.

In the ditches and fens of the east part of England, very rare.

Near Streatham ferry in the isle of Ely. *Ray.* In Lakenheath fen, near Wangford, Suffolk. *Mr. Francis Eagle.* On the banks of ditches, near Braford water, half a mile from Lincoln. *Rev. Mr. Woollaston.*

Perennial. *June, July.*

Root somewhat creeping, with many long, simple, stout fibres.

Stems erect, straight, roundish, furrowed, hollow, leafy, simple except at the summit, from 3 to 6 feet, or more, in height, loosely clothed with deciduous cottony down. *Leaves* numerous, sessile, scattered, lanceolate, taper-pointed, sharply serrated; smooth above; paler, as well as downy or cottony, beneath; the upper ones contracted and entire at the base; lower dilated, clasping, and equally serrated in that part. *Fl.* corymbose, not very numerous, but large and conspicuous, bright yellow, with many oblong, toothed, spreading rays. *Bractees* awl-shaped, scattered. *Cal.* hemispherical, nearly smooth; scales of the outer one linear. *Seeds* clothed with short hairs. *Down* roughish. *Recept.* beset with very short hairs between the seeds, but not chaffy.

10. *S. saracenicus.* Broad-leaved Ragwort.

Rays spreading, nearly entire. Flowers corymbose. Leaves lanceolate, serrated, minutely downy. Stem solid.

S. saracenicus. *Linn. Sp. Pl.* 1221. *Willd. v. 3.* 2004. *Fl. Br.* 887.

Engl. Bot. v. 31. t. 2211. *Hook. Scot.* 244. *Jacq. Austr. t.* 186.

S. n. 65. *Hall. Hist. v. 1.* 28.

Virga aurea maxima, radice repente. *Raii Syn.* 177. *Moris. v. 3.* 123.

V. aurea angustifolia serrata, sive Solidago sarracenic. *Bauh. Hist. v. 2.* 1063. f.

Solidago sarracenic. *Fuchs. Hist.* 728. f. *Ic.* 423. f. *Trag. Hist.* 487. f. *Ger. Em.* 429. f. *Dod. Pempt.* 141. f. *Lob. Ic.* 299. f.

In moist meadows and pastures, or watery lanes, rare.

Plentifully by a rivulet between Wells and Glastonbury. *Bobart.* Near Halifax. *Mr. Newton.* Very common in the fields at Sal-keld, Cumberland; *Mr. Nicholson.* *Dill.* Near Chester. *Mr. Okell.* About Settle, Yorkshire. *Mr. J. Windsor.* In a moist lane near Preston hall, between Kirkby Lonsdale and Kendall, Westmoreland; also in the King's park, Edinburgh. I had supposed it might have been planted in the last-mentioned place, but *Dr. Hooker*, in his *Flora*, mentions many stations of this plant in the Lowlands of Scotland.

Perennial. *July, August.*

Root creeping. *Stems* erect, from 3 to 5 feet high, full of pith, an-

gular, leafy, smooth, scarcely branched; corymbose and many-flowered at the summit. *Leaves* scattered, sessile, broadly lanceolate, acute, copiously serrated, or somewhat toothed, bright green, shining and apparently smooth, but when closely examined they are found covered with extremely minute, short, not cottony or hoary, pubescence; the upper ones gradually diminish to narrow, or awl-shaped, *bracteas*. *Fl.* bright yellow, on several, corymbose, often subdivided, angular, downy stalks. *Cal.* somewhat downy, the scales fringed and blackened at the tips; outer ones lanceolate. *Florets* of the radius several, but not numerous, elliptic-oblong, scarcely more than simply notched at the point. *Seeds* smooth, or slightly silky, short, obovate, angular. *Down* copious, minutely rough.

The herb is astringent and acrid. How far it might serve the Saracens as a vulnerary we know not, but it is not regarded as an article of our *Materia medica*. Some foreign species, as *S. Doria* and *nemorensis*, come near the present, rendering its synonyms in old writers precarious, particularly when their cuts are copied or borrowed from each other. Petiver's *t.* 16. *f.* 7, borrowed from Gerarde, belongs to *S. Doria*, known by the very few radiant *florets*.

399. ASTER. Star-wort.

Linn. Gen. 424. *Juss.* 181. *Fl. Br.* 888. *Tourn. t.* 274. *Lam. t.* 681. *Gærtn. t.* 170.

Nat. Ord. see *n.* 396.

Common Cal. imbricated; innermost scales with prominent points; lowermost spreading. *Cor.* compound, radiant; *florets* of the disk numerous, perfect, tubular, with 5 equal spreading segments; those of the radius more than 10, ligulate, oblong, 3-toothed, finally revolute. *Filam.* in the tubular *florets* only, capillary, short. *Anth.* in a cylindrical tube. *Germ.* in all the *florets* fertile, oblong. *Style* thread-shaped. *Stigmas* 2, oblong, spreading; those of the disk rather larger and thicker. *Seed-vessel* none, but the scarcely altered, spreading calyx. *Seed* obovate. *Down* sessile, capillary. *Recept.* naked, almost flat.

A vast American genus, chiefly perennial, of which several other countries possess a few species. The *leaves* are simple. *Radius* blue, rarely white. We have only one wild *Aster*.

1. *A. Tripolium.* Sea Star-wort.

Herbaceous, corymbose. *Leaves* lanceolate, entire, fleshy, smooth, obscurely three-ribbed. *Calyx*-scales obtuse, somewhat membranous.

438 SYNGENESIA—POLYG.-SUPERF. *Solidago*.

A. Tripolium. *Linn. Sp. Pl.* 1226. *Willd. v. 3.* 2039. *Fl. Br.* 888. *Engl. Bot. v. 2. t. 87.* *Hook. Scot.* 244. *Fl. Dan. t.* 615.

A. maritimus cæruleus, *Tripolium dictus*. *Raii Syn.* 175.

A. cæruleus glaber littoreus pinguis. *Moris. v. 3.* 121, *n.* 37 and 38. *sect. 7. t. 22. f.* 37, 38.

Tripolium. *Dod. Pempt.* 379. *f.* *Dalech. Hist.* 1389. *f.*

T. vulgare. *Lob. Ic.* 296. *f.* *Dalech. Hist.* 1390. *f.*

T. vulgare majus et minus. *Ger. Em.* 413. *f., f.* *Bauh. Hist. v. 2.* 1064. *f.* 1065. *f.*

T. minus. *Lob. Ic.* 296. *f.* *Dalech. Hist.* 1390. *f.*

Great and Small Sea Star-wort. *Petiv. H. Brit. t.* 17. *f.* 10, 11.

On the muddy sea coast, and in salt marshes, plentifully.

Perennial. *August, September.*

Root of many long stout fibres. *Herb* smooth, rather glaucous, varying extremely in size, and in quantity of flowers, but scarcely so distinctly differing in any case as to make a well defined variety. *Stem* round, hollow, generally erect, 2 or 3 feet high, leafy and many-flowered; often recumbent, or partly ascending, slightly leafy, with 3 or 4 flowers only, and those often destitute of rays. *Leaves* very smooth, coriaceous; the upper ones sessile, linear-lanceolate; radical ones stalked, larger, more elliptic-oblong, tapering at each end, always entire as far as I have observed, though Willdenow describes some slight serratures near the point. *Fl.* large and handsome, with a yellow or orange disk, and numerous, spreading, elliptic-oblong rays, 3-toothed at the extremity, generally of a bright blue, occasionally white, never revolute. *Seeds* compressed, fringed at the edges. *Down* reddish, minutely rough.

400. SOLIDAGO. Golden-rod.

Linn. Gen. 425. *Juss.* 181. *Fl. Br.* 889. *Lam. t.* 680. *Gærtn. t.* 170.

Virga aurea. *Tourn. t.* 275.

Nat. Ord. see *n.* 396.

Common Cal. oblong, imbricated; scales oblong, narrow, pointed, straight, converging. *Cor.* compound, radiant; *florets* of the disk numerous, perfect, tubular, with 5 equal spreading segments; those of the radius from 5 to 10, ligulate, elliptic-oblong, 3-toothed. *Filam.* in the tubular florets only, capillary, short. *Anth.* in a cylindrical tube. *Germ.* in all the florets fertile, oblong. *Style* thread-shaped. *Stigmas* 2, revolute; those of the disk rather thicker. *Seed-vessel* none, but the unchanged calyx. *Seed* obovate-oblong. *Down* sessile, capillary. *Recept.* naked, almost flat, slightly cellular.

A less numerous genus than the last, chiefly North-Ameri-

can, differing from *Aster* in having a yellow, never blue *radius*, whitish in *S. bicolor*. The habit agrees with the upright, paniced, oblong-leaved species of *Aster*, and the principal generic distinction rests on the *calyx-scales* being closely imbricated, not spreading. The ligulate *florets* of the radius are properly fewer than in *Aster*, but such a character must be variable. The *receptacle* is slightly cellular in our solitary species, but I know not whether that character runs through the whole genus, and according to Gærtner it exists in some species of *Aster*.

1. *S. Virgaurea*. Common Golden-rod.

Stem slightly zigzag, angular. Clusters downy, paniced, crowded, erect. Leaves partly serrated.

S. Virgaurea. Linn. *Sp. Pl.* 1235. Willd. v. 3. 2065. Fl. Br. 889. Engl. Bot. v. 5. t. 301. Hook. Scot. 244. Fl. Dan. t. 663.

S. n. 69. Hall. Hist. v. 1. 29.

Virga aurea. Raii Syn. 176. Ger. Em. 430. f. Matth. Valgr. v. 2. 354. f. Camer. Epit. 748, 749. f, f. Dod. Pempt. 142. f, f. Dalech. Hist. 1272. f, f. Lob. Ic. 298, 299. f, f.

V. aurea vulgaris latifolia. Bauh. Hist. v. 2. 1062. f.

Narrow and Common Golden Rod. Petiv. H. Brit. t. 16. f. 9, 10.

β. *Virga aurea vulgari humilior*. Raii Syn. 176. Dill. Elth. 414.

γ. *Solidago cambrica*. Huds. 367. Ait. H. Kew. ed. 2. v. 5. 70. Willd. *Sp. Pl.* v. 3. 2066.

Virga aurea montana, folio angusto subincano, flosculis conglobatis. Raii Syn. 177.

V. aurea cambrica, floribus conglobatis. Dill. Elth. 413. t. 306. f. 393.

δ. *V. aurea montana biuncialis pumila*. Pluk. Almag. 390. Phyt. t. 235. f. 7, 8.

In groves, thickets, grassy lanes, as well as on heaths, and mountains, at every degree of elevation.

Perennial. July—September.

A very variable plant in magnitude, number and size of *flowers*, and serratures of the *leaves*; nor do these varieties altogether depend on situation, except that in alpine specimens the *flowers* are larger and fewer. The *root* is woody, with long, stout, simple fibres. *Stem* usually from 1 to 3 feet high, erect, variously zigzag, never quite straight, leafy, angular, solid; purple below; most downy in the upper part, where it terminates in a leafy cluster, either simple or compound, of bright yellow *flowers*. Lower *leaves* stalked, elliptic-oblong, more or less acute, very rough or harsh at the edges, which are closely serrated, rarely altogether entire; upper smaller, gradually diminishing to *bractees*, which are downy like the *flower-stalks*. *Calyx-scales*

erect, lanceolate, downy, membranous at the edges, and finely fringed. *Marginal florets* from 6 to 10, elliptic-oblong, unequally 3-toothed, spreading; in decay becoming revolute and tawny; *disk* prominent. *Seeds* minutely hairy. *Down* rough.

When bruised, the whole herb smells like Wild Carrot. Its qualities are astringent, perhaps tonic, and it has been recommended as a vulnerary, both externally and internally.

What the above variety β , gathered by Sherard in Ireland, may be, I have not precisely ascertained. Its short description in Ray's *Synopsis* answers very nearly to γ , which Hudson and Willdenow reckoned a permanent species, but which I could never determine to be so. δ is merely a dwarf variety, growing, according to Dillenius, on barren sandy hillocks, and not much like *S. minuta* of Linnæus, whose synonyms are greatly confused, but which seems, by the original specimen, a variety of *S. Virgaurea*. Swiss specimens of *S. Virgaurea*, in the collections of Reynier and Davall, are even more various than those of Britain, especially in the size of their *flowers*.

401. INULA. Elecampane, and Flea-bane.

Linn. Gen. 426. *Juss.* 181. *Fl. Br.* 890. *Lam. t.* 680. *Gærtn. t.* 170.

Nat. Ord. see *n.* 396.

Common Cal. hemispherical, imbricated; scales loosely spreading at the points, various in form and proportion. *Cor.* compound, radiant, broad; *florets* of the disk very numerous, perfect, tubular, with 5 equal, upright or spreading segments; those of the radius numerous, crowded, ligulate, linear, 3-toothed. *Filam.* in the tubular florets only, thread-shaped, short. *Anth.* united into a cylindrical tube, with 5 sharp teeth at the summit, and 10 straight bristles at the base, equal in length to the filaments. *Germ.* in all the florets fertile, oblong. *Style* thread-shaped, cloven. *Stigmas* spreading, oblong, rather obtuse. *Seed-vessel* none, but the unaltered calyx. *Seed* linear, quadrangular. *Down* simple, sessile, as long as the seed, or longer. *Recept.* nearly flat, either quite naked, or slightly scaly.

A numerous genus, tolerably natural, well marked by the bristles at the base of the *anthers*. The *roots* are for the greater part perennial. *Stem* erect, simple or branched. *Leaves* simple, undivided, more or less downy, rarely quite smooth. *Fl.* large, yellow. Qualities aromatic, bitter, often mucilaginous.

SYNGENESIA—POLYGAMIA-SUPERF. *Inula*. 441

1. *I. Helenium*. Elecampane.

Leaves ovate, rugged, clasping the stem ; downy beneath.
Calyx-scales ovate, leafy.

I. Helenium. *Linn. Sp. Pl.* 1236. *Willd. v. 3.* 2089. *Fl. Br.* 891.
Engl. Bot. v. 22. t. 1546. *Woodv. t.* 108. *Hook. Scot.* 245. *Fl.*
Dan. t. 728.

Aster n. 72. *Hall. Hist. v. 1.* 31.

Helenium. *Raii Syn.* 176. *Ger. Em.* 793. *f. Matth. Valgr. v. 1.*
65. f. Camer. Epit. 35. f. Fuchs. Hist. 242. f. Ic. 135. f. Lob.
Ic. 574. f.

H. vulgare. *Bauh. Pin.* 276, not 267.

H. majus. *Cord. Hist.* 142. *f.*

ΕΛΕΥΘΙΟΝ. *Diosc. Ic. t.* 141.

Elecampane. *Petiv. H. Brit. t.* 16. *f. 1.*

In moist meadows and pastures, not common, though certainly wild, which Haller thought was not the case in Switzerland.

Frequent in Essex ; about St. Ives, Cornwall, and Bugden, Huntingdonshire ; also between Denbigh and St. Asaph. *Huds.* In several parts of Norfolk and Suffolk, and on Warboys Common, Huntingdonshire. *Mr. Woodward.* Near Dalton, Lancashire. *Mr. Atkinson.* Between Ulverstone and Foulness. *Mr. Crowe.* I noticed it in 1795 between Worcester and Ludlow, and between Bishop's Castle and New Town, Montgomeryshire.

Perennial. *July, August.*

Root thick, branching, aromatic, bitter and mucilaginous. *Stem* 3 feet high, leafy, round, furrowed, solid ; branched, and most downy, in the upper part. *Leaves* large, ovate, serrated, veiny ; downy and hoary at the back ; radical ones stalked ; the rest sessile, clasping the stem. *Fl.* solitary at the downy summits of the branches, 2 inches broad, bright yellow. Scales of the *calyx* broad, recurved, leafy, finely downy on both sides. *Rays* very numerous, long and narrow, each terminating in 3 unequal teeth. *Seeds* quadrangular, smooth. *Down* roughish. *Recept.* reticulated, not quite smooth or naked.

Various preparations of the boiled *root*, mixed with sugar, have been recommended to promote expectoration, and to strengthen the stomach. Some think a spirituous extract contains more of its aromatic and tonic properties. The plant is generally kept in rustic gardens, on account of many traditional virtues.

2. *I. dysenterica*. Common Flea-bane.

Leaves oblong, downy, clasping the stem with their heart-shaped base. Stem woolly, paniced. Calyx-scales bristle-shaped, hairy.

I. dysenterica. *Linn. Sp. Pl.* 1237. *Willd. v. 3.* 2091. *Fl. Br.* 891.

442 SYNGENESIA—POLYGAMIA-SUPERF. *Inula*.

Engl. Bot. v. 16. t. 1115. *Curt. Lond.* fasc. 3. t. 56. *Hook. Scot.* 245. *Fl. Dan.* t. 410. *Bull. Fr.* t. 299. *Ehrh. Pl. Off.* 128.

Aster n. 79. *Hall. Hist.* v. 1. 33.

Conyza media. *Raii Syn.* 174. *Ger. Em.* 482. f. *Matth. Valgr.* v. 2. 224. f. *Lob. Ic.* 345. f. *Dalech. Hist.* 1045. f. *Bauh. Hist.* v. 2. 1050. f.

C. media vulgaris. *Clus. Hist.* v. 2. 21. f. *Pann.* 526.

C. tertia. *Camer. Epit.* 614. f.

Calaminthæ tertium genus. *Fuchs. Hist.* 436. f. *Ic.* 246. f.

Common Flea-bane. *Petiv. H. Brit.* t. 16. f. 2.

In watery places by road sides, and in clear ditches, common.

Perennial. *August*.

Root creeping. *Herb* more or less woolly or cottony, glutinous, with a peculiar acid aromatic scent, somewhat like the flavour of peaches. *Stem* 12 or 18 inches high, round, branched, leafy, cottony, corymbose at the summit, with many bright yellow flowers, whose disk is of rather a deeper hue than their numerous narrow spreading rays. *Leaves* spreading, acute, veiny and wrinkled, slightly toothed or serrated, an inch or two long, sessile, clasping the stem with their heart-shaped, or arrow-shaped, base; the under side cottony. *Calyx-scales* numerous, very narrow and acute, woolly. *Seeds* bristly, obovate. *Down* rough. *Recept.* slightly cellular, unequally toothed, or scaly. Mr. Relhan mentions a variety with very short rays.

Haller speaks contemptuously of the medical virtues of this plant because, as he says, it abounds with earthy matter. Linnæus, in *Fl. Suec. ed.* 2. 294, records, on the authority of General Keith, that it cured the Russian army of the Dysentery;—hence the specific name.

3. *I. pulicaria*. Small Flea-bane.

Leaves clasping the stem, wavy. Stem much branched, hairy. Flowers hemispherical; radius scarcely longer than the disk.

I. pulicaria. *Linn. Sp. Pl.* 1238. *Willd.* v. 3. 2093. *Fl. Br.* 892. *Engl. Bot.* v. 17. t. 1196. *Hull ed.* 2. v. 1. 244. *Curt. Lond.* fasc. 3. t. 57. *Ehrh. Pl. Off.* 458. *Fl. Dan.* t. 613.

I. uliginosa. *Sibth.* 256.

I. cylindrica. *With.* 731.

Aster n. 80. *Hall. Hist.* v. 1. 33.

Conyza minor. *Raii Syn.* 174. *Matth. Valgr.* v. 2. 223. f. *Camer. Epit.* 613. f. *Trag. Hist.* 166. f.

C. minima. *Dod. Pempt.* 52. f. *Ger. Em.* 482. f. *Lob. Ic.* 345. f. *Dalech. Hist.* 1045. f.

C. mediæ minor species, flore vix radiato. *Bauh. Hist.* v. 2. 1050; *descr. only*.

Psyllium. *Cord. Hist.* 154. f.

Small Flea-bane. *Petiv. H. Brit t. 16. f. 3.*

In moist sandy heathy spots, especially where water has stagnated during winter.

Annual. *September.*

Root tapering, branched. *Stem* about a span high, upright, spreading, sometimes decumbent, a little zigzag, branched, corymbose, leafy, roundish, hollow, finely hairy, often purplish. *Leaves* scattered, elliptic-oblong, recurved, acute, nearly or quite entire, wavy, hairy on both sides; contracted at the base, slightly embracing the stem. *Fl.* solitary at the end of each branch, soon overtopped by lateral ones, much smaller than the last, being scarcely half an inch in diameter, of a dull pale yellow, with very short recurved rays, sometimes entirely wanting. *Calyx-scales* linear, acute, hairy, all nearly of equal length. *Seeds* of all the florets quadrangular, silky, crowned with 5 small teeth, besides the same number, or a few more, of rough spreading bristles, shorter than the calyx. The *anthers* are spurred at the base, as in the rest of the genus. *Recept.* tuberculated, besprinkled with a very few short hairs.

Here is a fine opportunity for the lovers of artificial genera to establish one, as unnatural as possible, by a technical character of no importance whatever. Nothing can be more truly an *Inula* than this plant, nor is there any doubt of its being the Linnæan *I. pulicaria*, though a suspicion to the contrary was communicated, by an able friend, to Dr. Withering.

4. *I. crithmoides*. Samphire-leaved Flea-bane.

Leaves linear, fleshy, partly three-pointed. Calyx smooth.

I. crithmoides. *Linn. Sp. Pl.* 1240. *Fl. Br.* 893. *Engl. Bot.* v. 1. t. 68. *Huds.* 369. *Hull. ed. 2. v. 1.* 244.

I. crithmifolia. *Linn. Syst. Veg. ed. 14.* 767. *Willd. Sp. Pl.* v. 3. 2101. *With.* 732.

Aster maritimus flavus, *Crithmum chrysanthemum dictus*. *Raii Syn.* 174.

A. littoreus luteus, folio angusto spisso, ad extremitatem trifido. *Moris. v. 3.* 119. *sect. 7. t. 21. f.* 16.

Crithmum chrysanthemum. *Dod. Pempt.* 706. *f. Ger. Em.* 533. *f.*

C. tertium. *Matth. Valgr. v. 1.* 446. *f.*; not good. *Camer. Epit.* 274. *f.*

Chrysanthemum littoreum. *Lob. Ic.* 395. *f.*

Golden Samphire. *Petiv. H. Brit. t. 17. f.* 9.

On the sea coast in a muddy soil, chiefly in the south.

In a marsh near Hurst castle, over against the isle of Wight, plentifully; on rocks at Llandwyn, Anglesea; and on the bank of the river near Maldon, Essex. *Ray*. In Shepey island. *Sherrard*. Portland island. *Rev. Mr. Baker*. On the Cornish coast, but sparingly. *F. Borone*.

Perennial. *August.*

Root creeping. *Whole plant* smooth. *Stem* round, leafy, nearly filled with pith. *Leaves* numerous, crowded, sessile, linear-oblong, extremely succulent, mostly with 3 blunt teeth at the end. *Fl.* terminal, few, solitary, on stalks clothed with awl-shaped bracteas. *Cal.* of many smooth, flat, taper-pointed scales. *Disk* orange-coloured. *Rays* spreading, of a golden yellow. *Seed-down* rough.

402. CINERARIA. Flea-wort.

Linn. Gen. 426. *Juss.* 181. *Fl. Br.* 894. *Lam. t.* 675. *Gærtn. t.* 170.

Nat. Ord. see *n.* 396.

Common Cal. simple, cylindrical, of numerous, equal, parallel, permanent scales. *Cor.* compound, radiant; *florets* of the disk numerous, perfect, tubular, with 5 equal upright segments; those of the radius as many as the scales of the calyx, ligulate, elliptic-oblong, toothed at the extremity. *Filam.* in the tubular florets only, thread-shaped, short. *Anth.* in a cylindrical tube, with 5 notches at the summit. *Germ.* in all the florets fertile, oblong. *Style* thread-shaped, not prominent. *Stigmas* spreading, oblong, bluntish. *Seed-vessel* none, except the unchanged calyx. *Seed* quadrangular, striated. *Down* copious, sessile, capillary, roughish, longer than the seed. *Recept.* naked, pitted, slightly convex.

Downy or cottony herbs, sometimes shrubby, more numerous in Southern Africa than elsewhere. *Leaves* simple, oblong or heart-shaped, entire or toothed, sometimes lyrate, or bipinnate. *Fl.* corymbose, or paniced, or solitary; yellow or purple; some of them white in the radius; some discoid only.

1. *C. palustris.* Marsh Flea-wort.

Flowers corymbose. Leaves broadly lanceolate, toothed or sinuated. Stem shaggy, leafy, hollow.

C. palustris. *Linn. Sp. Pl.* 1243. *Willd. v.* 3. 2080. *Fl. Br.* 894. *Engl. Bot. v.* 3. *t.* 151. *Huds.* 186. *Fl. Dan. t.* 573.

Othonna palustris. *Linn. Sp. Pl. ed.* 1. 924. *Fl. Suec. ed.* 2. 302. *Huds. ed.* 1. 327.

Solidago n. 131. *Gmel. Sib. v.* 2. 158. *t.* 72.

Conyza foliis laciniatis. *Raii Syn.* 174. *Ger. Em.* 483. *f.*

C. helenitis foliis laciniatis. *Lob. Ic.* 347. *f.*

Jacobæa aquatica elatior, foliis magis dissectis. *Moris. v.* 3. 110. *sect.* 7. *t.* 19. *f.* 24.

Marsh Flea-bane, and Jagged Flea-bane. *Petiv. H. Brit. t. 16. f. 5, 6.*

In ditches, and the boggy margins of deep pools, chiefly in the east parts of England.

In the fen ditches about Merch and Chatteris, in the isle of Ely; also in the ditches about Pillin moss, Lancashire; and about Aberavon, Merionethshire. *Ray.* Near Acle, Norfolk. *Sherard.* Near Haddiscoe. *Mr. Woodward.* In the borders of Skoulton meer, near Hingham. *Mr. Crowe.* On St. Faith's Newton bogs, Norfolk.

Perennial. *June, July.*

Root of many long fibres, running deep into the mud. *Herb* of a light greyish green, finely downy all over with jointed hairs, clammy to the touch. *Stem* a yard high, stout, hollow, simple, erect, leafy, angular, corymbose at the top. *Leaves* erect, scattered, sessile, lanceolate, ribbed, soft, variously toothed, wavy, and often pinnatifid; the upper ones most pointed. *Fl.* numerous, of a bright, but not deep, lemon-colour, erect, on shaggy corymbose stalks. *Cal.* hairy, pale green, cylindrical, not swelling at the bottom. *Bracteas* none. *Rays* rather short, numerous, spreading. *Seeds* furrowed, smooth. *Down* snow-white, long and plentiful.

2. *C. integrifolia.* Mountain Flea-wort.

Flowers simply and imperfectly umbellate, with several lanceolate bracteas. Radical leaves elliptical, obscurely toothed; the rest lanceolate; all shaggy. Stem unbranched.

C. integrifolia. *With.* 729. *Fl. Br.* 895. *Engl. Bot. v. 3. t. 152. Sibth.* 255. *Relh.* 332.

C. integrifolia β , *pratensis.* *Linn. Syst. Veg. ed. 14. 764. Jacq. Austr. t. 180. Herb. Linn.*

C. alpina γ , *integrifolia.* *Linn. Sp. Pl.* 1243.

C. alpina. *Huds.* 370. *Relh. ed. 1. 320. t. 4. Dicks. H. Sicc. fasc. 16. 12.*

C. campestris. *Willd. Sp. Pl. v. 3. 2081. Hook. Lond. t. 75. De-Cand. Fr. v. 4. 169.*

Senecio n. 68. Hall. Hist. v. 1. 29.

Jacobæa Pannonica, folio non laciniato. *Raii Syn.* 178. *Bauh. Hist. v. 2. 1056. f. Clus. Pann. 574. f. 573. Hist. v. 2. 22. f. 2.*

J. angustifolia. *Ger. Em.* 280. *f.*

Cambridge Ragwort. *Petiv. H. Brit. t. 17. f. 4.*

β . *Cineraria alpina.* *Allion. Pedem. v. 1. 203. t. 38. f. 2;* with some doubtful synonyms.

C. maritima, integrifolia. *Davies Welsh Botanol.* 79.

On chalky downs, or limestone cliffs.

On Gogmagog hills, Newmarket heath, and other like places.

446 SYNGENESIA—POLYG.-SUPERF. *Doronicum*.

Ray. Near Basingstoke and Andover. *Huds*. Near Tring, Herts. *Dickson*. On the downs of Dorsetshire and Oxfordshire. *Hooker*.

β. On cliffs near Holyhead, Anglesea. *Rev. H. Davies*.

Perennial. *May, June*.

Root of several long simple fibres. *Herb* clothed, more or less, with a shaggy, deciduous, cottony web, most dense and permanent on the backs of the leaves. *Stem* simple, erect, 6 or 8 inches high, leafy, terminating in an imperfect umbel, of 3 or 4, rarely only 1 or 2, bright yellow *flowers*, with several linear-lanceolate, acute, woolly *bracteas* at the base of their partial stalks. *Radical leaves* several, close to the ground, elliptic-oblong, tapering at the base, sometimes stalked, somewhat revolute, variously toothed, often entire; loosely cottony above; more copiously beneath; *stem-leaves* scattered, erect, lanceolate, revolute, entire, most cottony. *Cal.* somewhat woolly; the upper half of its scales pale and rather membranous. *Florets* of the radius nearly oval, obtuse, with 3 teeth. *Seeds* silky. *Down* rough.

Such is the common appearance of our chalk-country *Cineraria*, a slight variety of which, with longer-stalked *leaves*, is figured in *Ger. Em.* 304. *f.* 2, and *Lob. Ic.* 587. *f.* 1, copied in *Petiver*, *t.* 13. *f.* 5, as a sort of Hawkweed. As one of that genus, no wonder it could never be determined. Dr. Lamb of Newbury, directed by Gerarde, sought out the plant, in its original place of growth, near the Roman camp at Sidmonton, 10 yards south of the Decuman Port, and a specimen sent by him, drawn up a little perhaps amongst grass, is so like the wooden cut above indicated, that it leaves no doubt on the subject. See the synonyms of *Hieracium maculatum*, *p.* 360 of the present volume.

β is a still more remarkable plant, thrice the size of the above, with numerous broad teeth to some of its radical *leaves*, from 4 to 6 *flowers* in the umbel, nearly twice the size of those on the Newmarket heath specimens, and it is altogether so different in aspect, that were not the variableness of the present *Cineraria*, and some of its allies, so well known to alpine botanists, any body might think this a species. I cannot however detect a specific character. Mr. Davies points out its particular attachment to a maritime situation. Yet some Swiss specimens of Haller's *n.* 68, from Mr. Schleicher, connect it with *Engl. Bot.* *t.* 152, and identify Haller's description with our English plant.

403. DORONICUM. Leopard's-bane.

Linn. Gen. 427. *Juss.* 182. *Fl. Br.* 896. *Tourn. t.* 277. *Lam.* *t.* 679. *Gærtn. t.* 173.

Nat. Ord. see *n.* 396.

Common Cal. of about 20 linear-awl-shaped, equal, upright

scales, in a double row, generally nearly as long as the radiant florets. *Cor.* compound, radiant; *florets* of the disk numerous, perfect, tubular, with 5 equal, rather spreading segments; those of the radius as many as the scales of the calyx, or more, ligulate, linear, spreading, with 3—5 terminal, equal teeth. *Filam.* in the tubular florets only, capillary, very short. *Anth.* in a cylindrical tube, with 5 notches. *Germ.* in all the florets fertile, obovate. *Style* thread-shaped, rather prominent. *Stigma* small, spreading. *Seed-vessel* none, except the slightly converging, withering calyx. *Seed* obovate, a little compressed, furrowed. *Down* sessile, capillary, rough, on the seeds of the disk only, which are hairy; wanting on those of the radius, which are smooth. *Recept.* naked, pitted, somewhat convex.

Large, perennial, tuberous-rooted *herbs*, rather downy, with upright corymbose *stems*, broad, heart-shaped or oblong, mostly toothed *leaves*, and a few solitary, great, yellow *flowers*, earlier than most of this tribe.

1. *D. Pardalianches*. Great Leopard's-bane.

Leaves heart-shaped, toothed; radical ones stalked; the rest clasping the stem.

D. Pardalianches. *Linn. Sp. Pl.* 1247. *Willd. v. 3.* 2113. *Lightf.* 485. *Fl. Br.* 896. *Engl. Bot. v. 9. t.* 630. *Hook. Scot.* 245. *Hopk. Glott.* 104. *Mill. Ic.* 85. *t.* 128. *Jacq. Austr. t.* 350.

D. n. 88. *Hall. Hist. v. 1.* 36.

D. majus officinarum. *Ger. Em.* 759. *f.*

D. latifolium. *Clus. Hist. v. 2.* 16. *f.*

D. tertii varietas. *Lob. Ic.* 649. *f.*

Aconitum Pardalianches minus. *Matth. Valgr. v. 2.* 429. *f.* *Camer. Epit.* 824. *f.*

In mountainous pastures or meadows.

Gathered in the cold mountains of Northumberland, by Dr. Penny. *Gerarde*. In several places in the Lowlands of Scotland, as about Hoddam castle, in Annandale, &c., but always near houses. *Lightfoot*. In fields and hedges about Hamilton, scarcely indigenous. *Hopkirk*. In several other parts of the Lowlands. *Hooker*. On the banks of the Severn, below Bridgnorth. *With*. In a hedge by the road from Much-Wenlock, Shropshire, to the iron bridge. *Rev. S. Dickenson*. Near Saling hall, Essex. *Mr. Walford*. [Upon bogs at Newbury, Berks. *Mr. G. E. Smith*.]

Perennial. *May*.

Root of several knobs, connected by long fibres, creeping; woolly at the crown. *Stem* 2 or 3 feet high, hollow, round, obscurely

angular, leafy, hairy; branched and glutinous at the upper part. *Leaves* rather soft and downy, heart-shaped, more or less regularly toothed, or wavy; the radical ones large, obtuse, on long footstalks; those about the middle of the stem sessile, and clasping; upper ones much smaller, pointed. *Fl.* solitary at the ends of the branches, 2 inches wide, of a uniform bright yellow, the earliest overtopped by succeeding ones. *Calyx-scales* downy, with long taper points. *Seeds* furrowed; those of the marginal florets smooth, and quite destitute of a crown; those of the disk hairy, crowned with copious rough down. *Recept.* convex, pitted.

The characters of the various species are, as Dr. Hooker observes, not discriminative. The plants themselves are, nevertheless, abundantly distinct, especially *D. plantagineum*. I apprehend some mistake concerning the *Doronicum* in *Fl. Lond.* t. 88.

404. BELLIS. Daisy.

Linn. Gen. 429. *Juss.* 183. *Fl. Br.* 897. *Tourn. t.* 280. *Lam. t.* 677. *Gærtn. t.* 168.

Nat. Ord. *Compositæ*, γ , *discoideæ*. *Linn.* 49. *Corymbiferae*, *sect.* 3. *Juss.* 55. Three following genera the same.

Common Cal. simple, erect, of from 10 to 12 lanceolate, equal scales, in 2 rows. *Cor.* compound, radiant; *florets* of the disk numerous, perfect, tubular, with 5 equal spreading segments; those of the radius ligulate, lanceolate, slightly notched at the end, more numerous than the scales of the calyx. *Filam.* in the tubular florets only, capillary, very short. *Anth.* in a cylindrical, notched tube. *Germ.* in all the florets fertile, obovate. *Style* thread-shaped. *Stigmas* spreading, oblong, rather shorter and thicker in the florets of the disk. *Seed-vessel* none, but the spreading unaltered calyx. *Seed* obovate, compressed, without any margin, crown or seed-down. *Recept.* conical, hollow, naked.

Species few, of humble growth, with simple, obovate, chiefly radical, *leaves*. *Fl.* in Europe with a white or reddish radius, on simple stalks. Several caulescent species have been found in New Holland, with blue or purple flowers.

1. *B. perennis*. Common Daisy.

Root creeping. Flower-stalks radical, naked.

B. perennis. *Linn. Sp. Pl.* 1248. *Willd. v.* 3. 2121. *Fl. Br.* 897. *Engl. Bot. v.* 6. t. 424. *Curt. Lond. fasc.* 1. t. 62. *Hook. Scot.* 246. *Fl. Dan. t.* 503. *Bull. Fr. t.* 173.

B. n. 93. *Hall. Hist. v. 1. 39.*

B. sylvestris minor. *Raii Syn. 184. Ger. Em. 636. f. Fuchs. Hist. 147. f. Ic. 80. f. Dalech. Hist. 855. f.*

B. minor. *Matth. Valgr. v. 2. 263. f.*

Bellidis species. *Camer. Epit. 656. f.*

Primula veris. *Trag. Hist. 161. f.*

Solidago. *Brunf. Herb. v. 2. 25. f.*

Common Daisie. *Petiv. H. Brit. t. 19. f. 2.*

In pastures and meadows every where.

Perennial. *March—November.*

Root of numerous fibres, branching at the crown and somewhat creeping. *Leaves* numerous, all radical, depressed, obovate, crenate, single-ribbed, deep green, slightly hairy; tapering at the base. *Flower-stalks* several, radical, ascending, simple, round, hollow, hairy, entirely leafless, each bearing a solitary flower, most open in bright weather, yellow or orange-coloured in the disk, the white rays beautifully tinged with crimson. The *receptacle* is hollow, and remarkably convex, or pointed. *Seeds* sometimes fringed at the sides.

Double, as well as proliferous, Daisies, red, white or speckled, are common in gardens, and the proliferous variety is now and then found wild. Domestic cattle scarcely touch this plant. Notwithstanding its beauty, and its celebration by poets, the Daisy is thought a blemish or intruder in neat grass-plats, and can be overcome by perpetual stubbing only.

405. CHRYSANTHEMUM. Ox-eye.

Linn. Gen. 432. Juss. 183. Fl. Br. 898. Tourn. t. 280. Gærtn. t. 168.

Matricaria. Lam. t. 678. f. 3—6.

Nat. Ord. see n. 404.

Common Cal. hemispherical, closely imbricated, with numerous, roundish, convex scales, membranous and dilated at their margin, especially the innermost, which terminate in more or less of a dry, filmy, often jagged, appendage. *Cor.* compound, radiant; *florets* of the disk very numerous, perfect, tubular, level-topped, with 5 equal spreading segments; those of the radius more than 12, ligulate, spreading, elliptic-oblong, with 3 terminal teeth. *Filam.* in the tubular florets only, capillary, short. *Anth.* forming a notched tube. *Germ.* in all the florets obovate. *Style* a little prominent. *Stigmas* spreading, oblong, bluntish, generally uniform. *Seed-vessel* none, except the dry, spreading calyx, a little inflexed at the margin. *Seed* in all the florets oblong, or obovate, stri-

450 SYNGENESIA—POL.-SUPERF. *Chrysanthemum*.

ated, obtuse, without down or border. *Recept.* naked, rather convex.

Species numerous, in various parts of the globe, herbaceous; in some instances shrubby. *Leaves* simple or compound, smoothish, variously jagged, pinnatifid, or pinnate. *Fl.* terminal, with a yellow disk, and yellow, white, or reddish rays; not pleasantly scented.

* *Rays white.*

1. Ch. *Leucanthemum*. Great White Ox-eye. Moon Daisy.

Leaves clasping the stem, oblong, obtuse, cut; pinnatifid at the base; radical ones obovate, stalked.

Ch. *Leucanthemum*. *Linn. Sp. Pl.* 1251. *Willd. v. 3.* 2142. *Fl. Br.* 898. *Engl. Bot. v. 9. t.* 601. *Curt. Lond. fasc. 5. t.* 62. *Mart. Rust. t.* 109. *Hook. Scot.* 246. *Fl. Dan. t.* 994. *Bull. Fr. t.* 211. *Ehrh. Pl. Off.* 138.

Matricaria n. 98. *Hall. Hist. v. 1.* 41.

Leucanthemum vulgare. *Raii Syn.* 184.

Bellis major. *Ger. Em.* 634. *f. Matth. Valgr. v. 2.* 261. *f. Camer. Epit.* 653. *f. Fuchs. Hist.* 148. *f. Ic.* 81. *f. Dalech. Hist.* 853. *f. Lob. Ic.* 478. *f. Trag. Hist.* 144. *f.*

Bupthalthmon. *Brunf. Herb. v. 1.* 258. *f.*

Great Daisie. *Petiv. H. Brit. t.* 19. *f. 1.*

In pastures, fields and by way sides, common.

Perennial. *June, July.*

Root branched, tough and woody, with many fibres. *Stem* erect, simple or branched according to the soil, from 1 to 2 feet high, leafy, slightly hairy, furrowed, with red intermediate ribs. *Lower leaves* stalked, obovate, serrated or deeply cut; upper variously pinnatifid, especially at the base, clasping the stem; all deep green, nearly smooth. *Fl.* large, terminal, solitary, not inelegant, with a broad yellow disk, and brilliant white radius. *Calyx-scales* brown or blackish, with a shining, membranous, white border. *Seeds* black, with white ribs. The flavour of the whole plant is herbaceous, slightly, not pleasantly, aromatic. Its properties are not important. Like many other herbs, mixed with grasses, it makes a part of the hay crop.

** *Rays yellow.*

2. Ch. *segetum*. Yellow Ox-eye. Corn Marigold.

Leaves clasping the stem, glaucous; jagged upwards; toothed at the base.

Ch. *segetum*. *Linn. Sp. Pl.* 1254. *Willd. v. 3.* 2148. *Fl. Br.* 899.

SYNGENESIA—POLYG.-SUPERF. Pyrethrum. 451

Engl. Bot. v. 8. t. 540. *Curt. Lond. fasc.* 6. t. 60. *Mart. Rust.* t. 110. *Hook. Scot.* 246. *Raii Syn.* 182. *Ger. Em.* 743. f. *Fl. Dan.* t. 995. *Bull. Fr.* t. 339. *Clus. Hist.* v. 1. 334. f. *Lob. Ic.* 552. f.

Ch. minus. *Camer. Epit.* 794. f.

Ch. segetum vulgare glaucum. *Moris.* v. 3. 15. sect. 6. t. 4. f. 1.

Bellis lutea, foliis profundè incisis, major et minor. *Bauh. Pin.* 262.

Corn Marygold. *Petiv. H. Brit.* t. 19. f. 6.

β. Chrysanthemum segetum nostras, folio glauco multiscisso majus, flore minore. *Raii Syn.* 183.

In corn fields, turnip fields, &c. a troublesome weed.

Annual. *June—August.*

Root tapering, rather small. *Herb* smooth, of a glaucous green.

Stem alternately branched, bushy, leafy, angular. *Leaves* alternate, oblong, variously toothed or cut, rather succulent; clasping at the base. *Fl.* numerous, large, terminal, solitary, on naked hollow stalks swelling upward, their colour a uniform brilliant yellow. *Calyx-scales* green, with a broad membranous border. *Florets* of the radius obovate, two-ribbed, abrupt. *Seeds* compressed, grooved, smooth, without any crown or membranous border, which is erroneously attributed to them by the description in *Engl. Bot.*, the plate of which is correct.

β, a variety with more jagged *leaves*, and smaller *flowers*, was noticed near Glastonbury by Plukenet. No other person seems to have met with it.

However odious to the farmer, especially in his turnip fields, this is indisputably a splendid weed, almost as handsome as *Chrysanthemum coronarium*. It can only be eradicated by hand, before the seeds ripen.

406. PYRETHRUM. Feverfew.

Hall. Hist. v. 1. 40. *Fl. Br.* 900. *Willd. Sp. Pl.* v. 3. 2150. *Gærtn.* t. 169.

Matricaria. *Tourn.* t. 281. *Lam.* t. 678. f. 1.

Nat. Ord. see n. 404.

Common Cal. hemispherical, closely imbricated, with several oblong, nearly equal, bluntish scales, bordered with an equal membrane all round. *Cor.* compound, radiant; *florets* of the disk numerous, perfect, tubular, with 5 equal spreading segments; those of the radius numerous, ligulate, spreading, elliptic-oblong, with 3 terminal teeth. *Filam.* in the tubular florets only, capillary, short. *Anth.* in a cylindrical tube. *Germ.* in all the florets angular, abrupt. *Style* thread-shaped, not prominent. *Stigmas* spreading, obtuse, somewhat notched. *Seed-vessel* none, the calyx remaining unchanged. *Seed* in all the florets

oblong, angular, abrupt, furrowed, crowned with an elevated membranous border. *Recept.* naked, convex.

Herbaceous, very rarely shrubby; either perennial or annual. *Leaves* either simple and oblong, or repeatedly compound, or variously cut. *Fl.* terminal, with a yellow disk and white rays; generally smaller than in the last genus, from which the present is distinguished by the crown of the *seed*, and by the narrower, more simple, border of the more oblong and equal *calyx-scales*. Flavour bitter, often unpleasantly aromatic. Haller seems, by his own account, to have chosen the above generic name in allusion to the acrid roots of his *n.* 96. *P. alpinum* of Willdenow, which agree with the plant of the ancients to which he refers.

1. *P. Parthenium*. Common Feverfew.

Leaves stalked, compound, flat; leaflets ovate, cut; the uppermost confluent. Flower-stalks corymbose. Stem erect. Rays shorter than the diameter of the disk.

P. Parthenium. *Fl. Br.* 900. *Engl. Bot.* v. 18. t. 1231. *Willd. Sp. Pl.* v. 3. 2155. *Relh.* 334. *Hook. Scot.* 246.

Matricaria Parthenium. *Linn. Sp. Pl.* 1255. *Huds.* 371. *With.* 735. *Woodv. suppl.* t. 249. *Fl. Dan.* t. 674. *Bull. Fr.* t. 203. *Dalech. Hist.* 954. f.

M. n. 100. *Hall. Hist.* v. 1. 42.

Matricaria. *Raii Syn.* 187. *Ger. Em.* 652. f. *Dod. Pempt.* 35. f. *Trag. Hist.* 156. f. *Brunf. Herb.* v. 1. 246. f. 245.

M. nostras. *Lob. Ic.* 751. f.

Parthenium seu Matricaria. *Matth. Valgr.* v. 2. 258. f. *Camer. Epit.* 649. f.

Artemisia tenuifolia. *Fuchs. Hist.* 45. f.

A. ramosæ altera species. *Fuchs. Ic.* 26. f.

Feverfew. *Petiv. H. Brit.* t. 19. f. 5.

In waste ground, and about hedges, frequent.

Biennial. *June, July.*

Root tapering. *Stem* erect, branched, leafy, round, furrowed, many-flowered, about 2 feet high, or more. *Leaves* stalked, of a hoary green, once or twice pinnate, or pinnatifid; the leaflets, or segments, inclining to ovate, decurrent, cut. *Panicle* corymbose, sometimes compound; the *flower-stalks* long, naked, single-flowered, swelling upwards. *Fl.* erect, about half an inch broad, with a convex yellow disk, and numerous short, broad, abrupt, two-ribbed, white rays; often wanting; sometimes multiplied, and, the disk being obliterated, constituting a double flower. The *seeds* are certainly crowned with a short mem-

brane, overlooked by Haller, though he founded his genus *Pyrethrum* on that character.

The whole plant is bitter and strong-scented, reckoned tonic, stimulating, and anti-hysterical.

2. *P. inodorum*. Corn Feverfew. Scentless Mayweed.

Leaves sessile, pinnate; in numerous, capillary, pointed segments. Stem branched, spreading. Crown of the seeds entire.

P. inodorum. *Fl. Br.* 900. *Engl. Bot.* v. 10. t. 676. *Willd. Sp. Pl.* v. 3. 2157. *Hook. Scot.* 246. *Lond. t.* 101. *Relh.* 335.

Chrysanthemum inodorum. *Linn. Sp. Pl.* 1253. *With.* 734. *Fl. Dan.* t. 696.

Matricaria inodora. *Linn. Fl. Suec. ed.* 2. 297. *Huds.* 372.

Chamæmelum inodorum annuum humilius, foliis obscure virentibus. *Dill. in Raii Syn.* 186. *Moris.* v. 3. 36. n. 15. sect. 6. t. 12. f. 8.

Ch. inodorum, sive *Cotula non foetida*. *Bauh. Hist.* v. 3. 120. f.

Bupthalmum. *Fuchs. Hist.* 144. f. *Ic.* 78. f.

Mayweed. *Petiv. H. Brit.* t. 19. f. 12.

In cultivated fields, and by way sides, especially on a gravelly soil, very common.

Annual. *August, September.*

Root tapering, rather large. *Herb* nearly destitute of scent, at least of the peculiar, agreeable or disagreeable, odours of its tribe. *Stem* branched, spreading, leafy, angular, smooth. *Leaves* sessile, pinnate in a lyrate manner; leaflets in numerous, very narrow, smooth, acute segments, each tipped with a minute point. *Fl.* on long, terminal, naked stalks, large, with a convex yellow disk, and numerous, large, oblong, abrupt, pure white rays. *Calyx-scales* smooth, and compared with those of a *Chrysanthemum*, rather acute, as wanting the dilatation, or appendage, characteristic of that genus, and having a narrow membranous border along the whole margin. The membranous crown of the *seed* however stamps the genus, and this is entire, not lobed, in the present species. The *receptacle* is naked, very convex, but not acute.

A double variety, having a multiplied *radius*, and an obliterated contracted *disk*, was found in Norfolk by the late Mr. Crowe.

I am still in the dark about *Chamæmelum majus*, folio tenuissimo, caule rubente, *Dill. in Raii Syn.* 186; found about Battersea and Putney.

3. *P. maritimum*. Sea Feverfew.

Leaves sessile, doubly pinnate, fleshy, pointless; convex

454 SYNGENESIA—POLYG.-SUPERF. *Matricaria*.

above; keeled beneath. Crown of the seeds lobed. Stems diffuse.

P. maritimum. *Fl. Br.* 901. *Engl. Bot.* v. 14. t. 979. *Willd. Sp. Pl.* v. 3. 2157. *Hook. Scot.* 246.

Matricaria maritima. *Linn. Sp. Pl.* 1256. *Lightf.* 491. *With.* 736.

M. inodora γ . *Huds.* 373.

Chamæmelum maritimum perenne humilius, foliis brevibus crassis, obscure virentibus. *Dill. in Raii Syn.* 186. t. 7. f. 1.

On the sea coast, in sandy as well as stony ground.

At Cockbush on the Sussex coast, 7 miles from Chichester, in plenty. *Dill.* At Weymouth. *Rev. Archdeacon Gooch.* At Whitburn, Durham. *Mr. E. Robson.* In the isle of Bute, and on the western side of Cantire. *Lightf.* In the loose sand of the shore of Manorbria bay, 6 miles from Pembroke. *Mr. Adams.* I have gathered it on the coast of the Mersey, above Liverpool; and have received it from the rocks at Doun, near Bamff. Several Scottish situations are mentioned by Dr. Hooker.

Perennial. *July, August.*

Abundantly distinct from the last, to which Hudson referred it, notwithstanding the excellent description and remarks of Dillenius. The thick, woody, long-enduring *root* runs deep into the ground, producing a number of procumbent, branched, leafy, smooth, angular, hollow *stems*, spreading circularly on the ground, often tinged with purple. *Leaves* crowded, sessile, of a dark shining green, fleshy, doubly pinnate, with short blunt segments, destitute of any terminal point, or minute bristle; they are convex on both sides, but especially at the back. *Fl.* not quite so broad as those of *P. inodorum*, for though the very convex, yellow or reddish, disk is often broader than in that species, the white rays are shorter. *Calyx-scales* bordered with a very narrow, brown or blackish membrane; the outer ones acute; inner rounded, but not dilated, nor furnished with any additional scale. *Seeds* crowned with a cup-shaped, deeply four-lobed, cartilaginous rather than membranous border, especially 2 or 3 rows of the outermost, which seem to have belonged to radiant florets, the seeds in the middle of the disk having smaller, more unequal, borders. This part is not so well represented in *Engl. Bot.* as it ought to have been. The whole herb is slightly aromatic.

407. MATRICARIA. Wild-Chamomile.

Linn. Gen. 432. *Juss.* 183. *Fl. Br.* 902. *Lam. t.* 678. f. 2. *Gärtn. t.* 168.

Nat. Ord. see n. 404.

Common Cal. slightly convex, closely imbricated, with several oblong, nearly equal, membranous-edged scales. *Cor.* compound, radiant; *florets* of the conical disk nu-

merous, perfect, tubular, with 5 equal spreading segments; those of the radius numerous, ligulate, spreading or reflexed, abrupt, with 3 terminal teeth. *Filam.* in the tubular florets only, capillary, very short. *Anth.* in a cylindrical tube. *Germ.* in all the florets obovate, angular. *Style* thread-shaped, not prominent. *Stigmas* spreading, obtuse. *Seed-vessel* none, but the unchanged expanded calyx. *Seed* in all the florets obovate, angular, without any border or crown. *Recept.* naked, almost perfectly cylindrical, hollow.

Habit like the more fine-leaved species of the last genus, from which the present differs in the total want of a crown to the *seed*, and in the sharply conical, nearly cylindrical, *receptacle*. *Disk* yellow. *Radius* white.

1. *M. Chamomilla*. Common Wild-Chamomile.

Leaves smooth, pinnate; leaflets linear, simple or divided.

Rays spreading. Calyx-scales dilated, bluntish.

M. Chamomilla. *Linn. Sp. Pl.* 1256. *Willd. v. 3.* 2161. *Fl. Br.* 902. *Engl. Bot. v. 18. t.* 1232. *Curt. Lond. fasc. 5. t.* 63. *Mart. Rust. t.* 74. *Hook. Scot.* 246. *Ehrh. Pl. Off.* 58.

M. n. 101. *Hall. Hist. v. 1.* 43.

Chamæmelum. *Raii Syn.* 184. *Ger. Em.* 754. *f.*

Ch. vulgare. *Dod. Pempt.* 257. *f.* *Bauh. Pin.* 135.

Ch. vulgare leucanthemum Dioscoridis. *Moris. v. 3. 35. sect. 6. t.* 12. *f.* 7.

Ch. leucanthemon. *Fuchs. Hist.* 25. *f.*

Chamomilla vulgaris. *Trag. Hist.* 148. *f.*

Anthemis, sive *Chamæmilla*. *Matth. Valgr. v. 2.* 256. *f.*

A. vulgator, sive *Chamæmilla*. *Lob. Ic.* 770. *f.*

Bitter Camomile. *Petiv. H. Brit. t.* 19. *f.* 9.

In cultivated and waste ground, on dunhills, and by road sides.

Very common about London; rare in Norfolk. At St. Faith's Newton, near Norwich.

Annual. *May—July*.

Root rather large and woody. *Stem* a foot high, erect, copiously branched, leafy, smooth, striated, somewhat angular, solid. *Leaves* sessile, clasping the stem, smooth, deep green; the upper ones simply, the rest doubly, pinnate, or rather pinnatifid, with linear, narrow, minutely pointed, segments. *Fl.* numerous, terminal, solitary, stalked, about the size of the Common Sweet Chamomile, *Anthemis nobilis*, and with some portion of the same scent, of which the herbage, though faintly, partakes. The *rays* are white, reflexed at night, elliptic-oblong, with 3 teeth. *Disk* yellow, conical, and very prominent. *Calyx-scales* dilated outwards, rounded, and bluntish. *Recept.* very different

in shape from either of the two last genera, though, like them, quite naked; while on the other hand the *calyx* is much more flat, not hemispherical. *Seeds* angular, oblique, quite destitute of any crown or border.

M. suaveolens, once reckoned a British plant, has less compound leaves; flowers not half so large; and rather more acute, or linear, *calyx-scales*. It grows in the south of Europe only.

408. ANTHEMIS. Chamomile.

Linn. Gen. 434. *Juss.* 185. *Fl. Br.* 903. *Lam. t.* 683. *Gærtn. t.* 169. *Chamæmelum. Tourn. t.* 281. *Gærtn. t.* 168.

Bupthalmum. Tourn. t. 282.

Nat. Ord. Compositæ, γ, discoideæ. Linn. 49. *Corymbiferae. sect. 5. Juss.* 55. Next genus the same.

Common Cal. hemispherical, closely imbricated, with several oblong, nearly equal scales. *Cor.* compound, radiant; *florets* of the convex disk numerous, perfect, tubular, with 5 equal spreading segments; those of the radius numerous, ligulate, spreading, abrupt, generally with 3 teeth. *Filam.* in the tubular florets only, very short, capillary. *Anth.* in a cylindrical tube. *Germ.* in all the florets obovate. *Style* thread-shaped, not prominent. *Stigmas* spreading, oblong, simple or divided. *Seed-vessel* none but the unaltered calyx. *Seed* in all the florets obovate, rather compressed, generally with a slight border, or crown. *Recept.* more or less convex, or conical, beset with lanceolate, acute, chaffy scales, one to each tubular floret, and generally about the same height.

Habit much like the last, but with more of an aromatic or bitter flavour. The species are rather numerous; somewhat various in their foliage; natives of Europe and the north of Africa, some of America. *Disk* yellow. *Rays* yellow, or white. The scaly *receptacle* distinguishes *Anthemis* from all the foregoing genera, with some of which it agrees in other respects.

* *Rays white.*

1. *A. maritima.* Sea Chamomile.

Leaves doubly pinnatifid, acute, fleshy, dotted, somewhat hairy. Stem prostrate. Scales of the receptacle prominent, sharp-pointed.

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A. maritima. *Linn. Sp. Pl.* 1259. *Willd. v. 3.* 2175. *Fl. Br.* 904. *Engl. Bot. v. 33. t.* 2370.

A. maritima annua odorata præcox, flore albo, caule purpurascente. *Mich. Gen.* 33.

Chamæmelum maritimum latifolium procumbens ramosissimum, flore albo. *Pluk. Almag.* 97. *Dill. in Raii Syn.* 186.

Ch. maritimum odoratum præcox, flore albo, caule purpurascente. *Till. Pis.* 39. *t. 19. f.* 3.

Ch. maritimum. *Dalech. Hist.* 1394. *f.*; bad.

Ch. marinum. *Bauh. Hist. v. 3. p. 1.* 122. *f.*; better.

Parthenium maritimum minimum. *Dalech. Hist.* 1395. *f.*

Cotula, sive Parthenion marinum minimum. *Lob. Ic.* 774. *f.*

On the sea coast, in rocky or stony ground, but rare.

At Sunderland, Durham. *Mr. E. Robson.*

Annual. *July.*

Stems prostrate, a span long, leafy, angular, branched, hoary with loose cottony down, sometimes purplish. *Leaves* sessile, fleshy, loosely hairy, especially beneath, deeply cut into many sharply pinnatifid segments; flat and bright green, marked with depressed dots, on the upper side. *Fl.* terminal, solitary, on furrowed, hairy or cottony stalks. *Cal.* in like manner hairy; its inner scales elongated, torn, and almost feathery; outer ones acute, much shorter. *Disk* convex, not conical, bright lemon-coloured; the points of the scales, of the same colour, visible between the florets, especially before the latter expand. *Radius* of many cream-coloured, oblong, 3-toothed, horizontal florets. *Stigmas*, in the fl. of the disk at least, deeply cloven. *Seeds* oblong, crowned with an extremely narrow entire border.

The *flowers* smell like Tansy; the *leaves* like Mugwort.

2. *A. nobilis.* Common Chamomile.

Leaves doubly pinnate, semicylindrical, acute, a little downy.

Stem procumbent. Scales of the receptacle membranous, obtuse, shorter than the florets.

A. nobilis. *Linn. Sp. Pl.* 1260. *Willd. v. 3.* 2180. *Fl. Br.* 904. *Engl. Bot. v. 14. t.* 980. *Woodv. t.* 103. *Hook. Scot.* 247. *Ehrh. Pl. Off.* 238.

A. seu Leucanthemis odorata. *Lob. Ic.* 770. *f.*

Chamæmelum n. 102. *Hall. Hist. v. 1.* 44.

Ch. odoratissimum repens, flore simplici. *Raii Syn.* 185. *Bauh. Hist. v. 3. p. 1.* 118. *f.*

Ch. romanum. *Ger. Em.* 755. *f.* *Camer. Epit.* 646. *f.*

Ch. odoratum. *Dod. Pempt.* 260. *f.*

Sweet Camomile. *Petiv. H. Brit. t.* 19. *f.* 10.

On open gravelly pastures, or commons.

In Cornwall very plentiful. *Ray.* At Oatlands, Surrey. *Mr. Wood-*

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ward. Staffordshire ; Mr. Pitt. *Withering.* On Blackheath, and on Hounslow heath in abundance ; also near Lowestoft, Suffolk, and in several parts of Norfolk.

Perennial. *August, September.*

The roots are strong, with long fibres. *Stems* in a wild state prostrate, in gardens more upright, a span long, branched, leafy, hollow, round, furrowed, downy. *Leaves* doubly pinnate, with narrow linear segments, not truly thread-shaped or cylindrical, but rather flat or channelled above, convex beneath ; all acute, often bristle-pointed, a little hairy. *Fl.* terminal, solitary, rather larger than a Daisy, with a convex yellow disk, and numerous, white, spreading or reflexed, rays. The scales of the *receptacle* do not appear till the florets of the disk are turned to one side, and the innermost are gradually narrowest ; all thin and membranous, not sharp. *Cal.* with shining membranous-bordered scales, rather downy. *Recept.* obtusely conical. *Seeds* very obscurely bordered at the summit.

Varieties with double *flowers*, whose yellow tubular florets are, entirely or partially, transformed into white ligulate ones, are common in gardens ; the discoid variety, destitute of rays, is more rare. The latter perhaps ought to be preferred for medical use ; the double white flowers being now acknowledged to be weaker than those in a natural state. Every-part of the plant is intensely bitter, and gratefully aromatic, especially the *flowers*, whose stomachic and tonic powers are justly celebrated.

3. *A. arvensis.* Corn Chamomile.

Receptacle conical ; scales lanceolate, acute, keeled, prominent. Seeds crowned with a quadrangular border. Leaves doubly pinnatifid, hairy ; segments parallel.

A. arvensis. *Linn. Sp. Pl.* 1261. *Willd. v. 3.* 2180. *Fl. Br.* 905. *Engl. Bot. v. 9. t.* 602. *Mart. Rust. t.* 73. *Hook. Scot.* 247.

Chamæmelum n. 103. *Hall. Hist. v. 1.* 44.

Ch. inodorum. *Dill. in Raii Syn.* 185. *Bauh. Pin.* 135 ?

White Ox-eye. *Petiv. H. Brit. t. 19. f.* 8.

In cultivated fields, as well as waste ground, chiefly on a gravelly soil.

About London, towards Peckham and Eltham. *Sherard.* At Walthamstow. *Mr. B. M. Forster.* In various parts of Norfolk occasionally. *Mr. Crowe.*

Annual, or Biennial. *June, July.*

Root tapering, rather small. *Stem* erect, much branched, leafy, hollow, many-flowered, hoary with fine soft shaggy hairs, often purplish, from 12 to 18 inches high. *Leaves* sessile, doubly and regularly pinnatifid, hairy, of a greyish green ; their segments uniform, parallel and equal, lanceolate rather than linear, acute, each tipped with a small bristle ; dotted at the back ; when dry

all converging inwards. *Fl.* solitary, on long, terminal, furrowed stalks, very downy at the summit. *Cal.* downy, its scales nearly equal, slightly bordered. *Disk* convex, bright yellow; the yellow, sharp, keeled scales of the *receptacle* visible just above the florets, and remaining after they and their seeds are gone. *Rays* numerous, finally recurved, pure white, elliptical, unequally toothed, their length exceeding the diameter of the disk, which as the seeds ripen becomes conical. *Seeds* curved, striated, abrupt, crowned with a quadrangular border.

The herbage has little or no smell, but the *flowers* are pleasantly scented. The synonyms of old writers are with difficulty applicable to this plant or its allies, the *receptacle*, whether scaly or naked, not being noticed by them. That of Bauhin is very doubtful, on account of the authors he quotes, and especially his observation, that the present species differs from *Chamæmelum vulgare*, *Matricaria Chamomilla*, only with respect to the smell. Few plants of the same tribe differ more essentially and obviously. In the regularity of the segments of its *leaves*, characteristic of a true *Anthemis*, this species approaches *A. tinctoria*.

4. *A. Cotula*. Stinking Mayweed, or Chamomile.

Receptacle conical; scales bristle-shaped. Seeds without any border. Leaves doubly pinnatifid, slightly hairy; segments spreading.

A. Cotula. Linn. *Sp. Pl.* 1261. Willd. *v.* 3. 2181. *Fl. Br.* 906. *Engl. Bot.* *v.* 25. *t.* 1772. *Curt. Lond. fasc.* 5. *t.* 61. *Hook. Scot.* 247.

Chamæmelum n. 104. *Hall. Hist.* *v.* 1. 44.

Ch. foetidum. Raii *Syn.* 185. *Bauh. Pin.* 135.

Ch. foetidum, sive *Cotula foetida*. *Bauh. Hist.* *v.* 3. *p.* 1. 120. *f.*

Cotula foetida. *Brunf. Herb.* *v.* 1. 255. *f.* *Ger. Em.* 757. *f.* *Lob. Ic.* 773. *f.* *Dalech. Hist.* 1345. *f.*

C. alba. *Dod. Pempt.* 258. *f.*

Parthenium. *Fuchs. Hist.* 583. *f.* *Ic.* 335. *f.*

Stinking Camomile. *Petiv. H. Brit.* *t.* 19. *f.* 11.

In corn fields, and waste ground, common.

Annual. *June, July.*

Root tapering, twisted. *Stems* one or more, erect, branched, bushy, leafy, angular and furrowed, smooth, solid. *Leaves* sessile, bright green, smooth, or slightly hairy, doubly pinnatifid, and cut; the segments narrow, flat, a little succulent, spreading and rather distant, not crowded or parallel, somewhat bristle-pointed. *Fl.* solitary, on terminal, striated, slightly downy stalks. *Cal.* more or less hairy, its scales almost equal, obtuse, slightly bordered. *Disk* convex, lemon-coloured, the slender bristle-shaped, or awl-shaped, greenish scales not quite so tall as the opening florets. *Rays* white, elliptical, 3-toothed, deflexed close

to the stalk at night. *Seeds* obovate, furrowed, entirely without any border, or crown, but sometimes, as Haller describes them, rough with minute tubercles. This however is not invariable. *Recept.* highly conical, almost cylindrical, beset with slender permanent scales.

Every part of the plant is fetid and acrid, blistering the skin when much handled, which Dr. Hooker justly attributes to the minute resinous dots sprinkled over its surface. Dillenius has noticed a variety with double flowers.

** *Rays yellow like the disk.*

5. *A. tinctoria.* Ox-eye Chamomile.

Leaves doubly pinnatifid, serrated; downy beneath. Stem corymbose, erect. Seeds crowned with a membranous undivided border.

A. tinctoria. Linn. *Sp. Pl.* 1263. Willd. v. 3. 2189. *Fl. Br.* 907. *Engl. Bot.* v. 21. t. 1472. Dicks. *H. Sicc. fasc.* 17. 17. Don *H. Br. fasc.* 2. 42. Hook. *Scot.* 247. *Fl. Dan.* t. 741.

Chamæmelum n. 105. Hall. *Hist.* v. 1. 45.

Ch. chrysanthemon. Fuchs. *Hist.* 26. f. Ic. 15. f. Bauh. *Hist.* v. 3. p. 1. 122. f.

Buphthalmum. Matth. *Valgr.* v. 2. 260. f. Camer. *Epit.* 651. f. *Trag. Hist.* 152. f.

B. vulgare. Raii *Syn.* 183. Ger. *Em.* 747. f.

Chrysanthemum foliis tanacetii. Loes. *Pruss.* 47. t. 9.

Ch. tanacetii foliis, flore aureo. Barrell. *Ic.* t. 465.

Yellow Ox-eye. Petiv. *H. Brit.* t. 19. f. 7.

In stony mountainous places, or in fields, very uncommon.

On a bank by the river Tees, not far from Sogburn, Durham.

Ray. Not now to be found there. Mr. E. Robson. In Essex.

Dickson. Near Forfar. Mr. G. Don.

Biennial? July, August.

Stem bushy, corymbose, erect, 18 inches high, leafy, angular, solid, downy or cottony, especially in the upper part. *Leaves* sessile, doubly and accurately pinnatifid, with sharp, partly notched, parallel, decurrent segments; green, rough, or hairy, above; white and cottony beneath. *Fl.* on long, terminal, striated, downy stalks, solitary, large, of a bright yellow in the rays as well as disk. *Cal.* downy, or shaggy, especially the inner scales. *Seeds* oblong, quadrangular, striated, each crowned with a narrow, undivided, quadrangular rim. Scales of the *receptacle* permanent; broad and chaffy in their lower half; awl-shaped, sharp and yellow above, on a level with the florets of the disk. The *flowers* afford a fine yellow dye, for which Linnæus says they are much used in Sweden. Sometimes the *radius* varies to a pale straw-colour. There are several handsome exotic species nearly akin to this.

409. *ACHILLEA*. Yarrow.

Linn. Gen. 435. *Juss.* 186. *Fl. Br.* 908. *Vaill. Mém. de l'Ac. des Sc.* 593. *f.* 2, 10, 36. *Lam. t.* 683. *Gærtn. t.* 168.

Millefolium, and *Ptarmica*. *Tourn. t.* 283.

Nat. Ord. see n. 408.

Common Cal. ovate, imbricated, with several ovate, acute, converging scales. *Cor.* compound, radiant; *florets* of the disk not very numerous, all perfect, tubular, with 5 equal spreading segments; those of the radius from 5 to 10, ligulate, but peculiarly short and rounded, broader than long, inversely heart-shaped with a small intermediate lobe or tooth. *Filam.* in the tubular *florets* only, very short, capillary. *Anth.* in a cylindrical tube. *Germ.* in all the *florets* small, obovate. *Style* thread-shaped, not prominent. *Stigmas* spreading, obtuse. *Seed-vessel* none, but the upright, scarcely altered, calyx. *Seed* in all the *florets* obovate, abrupt, without any border or crown. *Recept.* narrow, slightly elevated, beset with lanceolate, chaffy, acute, deciduous scales, as tall as the *florets* of the disk.

A very natural genus of perennial *herbs*, with simple, serrated, pinnatifid, or doubly pinnatifid *leaves*, either smooth or downy. *Fl.* numerous, small, corymbose, erect, white, reddish, buff-coloured, or yellow. Qualities aromatic, bitter, tonic and stimulating.

The above generic character will be found to differ, in some particulars, from that of Linnæus, especially with regard to the shape of the *receptacle*. *Achillea*, though different in habit from *Anthemis*, comes very near that genus in character; but the short, broad, rounded *florets* of the radius afford a good distinction.

1. *A. Ptarmica*. Sneezewort Yarrow. Goose-tongue.

Leaves linear, pointed, equally and sharply serrated, smooth.

A. Ptarmica. *Linn. Sp. Pl.* 1266. *Willd. v.* 3. 2191. *Fl. Br.* 908. *Engl. Bot. v.* 11. *t.* 757. *Curt. Lond. fasc.* 5. *t.* 60. *Hook. Scot.* 248. *Fl. Dan. t.* 643.

A. n. 117. *Hall. Hist. v.* 1. 49.

Ptarmica. *Raii Syn.* 183. *Ger. Em.* 606. *f.* *Matth. Valgr. v.* 1. 535. *f.* *Camer. Epit.* 354. *f.* *Fuchs. Hist.* 639. *f.* *Ic.* 367. *f.* *Dalech. Hist.* 1168. *f.*

P. vulgaris, folio longo serrato, flore albo. *Bauh. Hist. v.* 3. *p.* 1. 147. *f.*

Tanacetum album seu acutum. *Trag. Hist.* 159. *f.*

Dracunculus pratensis, serrato folio. *Bauh. Pin.* 98.

Sneeze-wort. *Petiv. H. Brit. t.* 19. *f.* 3.

In wet hedges and thickets, or about the banks of rivers.

Perennial. *July, August.*

Root creeping widely, difficult of extirpation where the soil is moist. *Stems* upright, about 2 feet high, angular, smooth, hollow, leafy, with small axillary rudiments of branches; corymbose at the top. *Leaves* sessile, linear, or slightly lanceolate, acute, closely, very minutely and sharply serrated, with bristly teeth; smooth on both sides, of a dark somewhat glaucous green. *Fl.* milk-white in the disk as well as radius, larger than in most of their genus, and with a greater number of ligulate florets. A double variety, whose disk consists entirely of such, is frequent in country gardens. *Cal.* rather hemispherical. *Seeds* compressed, dilated at the edges, but not crowned at the top.

The whole plant has a pungent flavour, provoking a flow of saliva, and this flavour perhaps renders it acceptable, as Schreber asserts, to sheep, who delight occasionally in saltish food. The sneezing, caused by the dried and powdered *leaves*, is rather owing to their little sharp marginal prickles.

2. *A. serrata*. Serrated Yarrow.

Leaves linear-lanceolate, sessile, downy, deeply serrated; lacinated at the base. *Flowers* almost simply corymbose.

A. serrata. *Retz. Obs. fasc.* 2. 25. *Willd. Sp. Pl. v.* 3. 2194. *Comp. ed.* 4. 140. *Engl. Bot. v.* 36. *t.* 2531.

Dracunculus alpinus, Agerati foliis incanis. *Raii Hist. v.* 1. 344.

In mountainous limestone countries, rare.

Not far from Matlock, Derbyshire. *Mr. Rupp and Mr. Williams. Engl. Bot.*

Perennial. *August.*

Root fibrous, or somewhat creeping. *Stem* about 18 inches high, round, downy, leafy, with axillary leafy tufts, as in the preceding. *Leaves* linear-lanceolate, downy, bluntish, sharply and strongly serrated; pinnatifid, spreading, and clasping the stem, at their base. *Corymbs* simple or slightly compound, leafy, with downy stalks. *Fl.* few, of a yellowish white, or buff-colour, not half the size of the foregoing, their disk much narrower in proportion. Whole herb with a powerful aromatic scent and bitter flavour, somewhat like Tansy, but agreeing more with *A. Ageratum*, often preserved in country gardens. The latter however has differently shaped *leaves*, and very abundant, quite yellow *flowers*, not a fifth part so large as those of the plant before us.

I have seen no Swiss specimens answerable to this species. It is certainly not the γ of Haller's *n.* 117, figured in Boccone's *Mu-*

seum, t. 85, nor is there any evidence of its having been known to Linnæus.

3. *A. Millefolium*. Common Yarrow, or Milfoil.

Leaves doubly pinnatifid, hairy; segments linear, toothed, pointed. Stem furrowed.

A. Millefolium. Linn. *Sp. Pl.* 1267. Willd. v. 3. 2208. *Fl. Br.* 908. *Engl. Bot.* v. 11. t. 758. *Curt. Lond. fasc.* 6. t. 61. *Mart. Rust.* t. 123. *Woodv.* t. 64. *Hook. Scot.* 248. *Fl. Dan.* t. 737. *Bull. Fr.* t. 163.

A. n. 107. *Hall. Hist.* v. 1. 46.

Millefolium. *Tillands Ic.* 74. f.

M. vulgare. *Raii Syn.* 183. *Trag. Hist.* 477. f.

M. terrestre vulgare. *Ger. Em.* 1072. f. not good.

Stratiotes millefolia. *Fuchs. Hist.* 727. f. *Ic.* 422. f.

Yarrow, or Nose-bleed. *Petiv. H. Brit.* t. 19. f. 4.

In meadows and pastures abundantly.

Perennial. *June—August*.

Root creeping, with smooth, reddish, subterraneous shoots, which are warm and agreeably pungent, partaking of the flavour and salivating quality of *Anthemis Pyrethrum*, or Pellitory of Spain. *Stems* erect, a foot high, or more, slightly branched, leafy, furrowed, downy, corymbose and many-flowered. *Leaves* doubly pinnatifid, and deeply subdivided, with numerous, linear-wedge-shaped, bristle-pointed segments, most hairy beneath. *Fl.* numerous, white, occasionally reddish, or purple, represented with much too broad a disk in the plate of *Engl. Bot.* The whole herb is astringent, and weakly aromatic. The leaf loosely rolled together, and put up the nostrils, causes, by an external blow of the finger, a bleeding at the nose, which proves more or less copious according to the state of the vessels within. The cuts of old authors in general do not well express the foliage. Gerarde's figure of the red-flowered variety is better than what he gives for the common kind. *Matth. Valgr.* v. 2. f. 485, 486, though probably intended for our Yarrow, convey no just idea of it; and *Camer. Epit.* f. 876, 877, are still worse.

4. *A. tomentosa*. Woolly Yellow Milfoil, or Yarrow.

Leaves doubly pinnatifid, woolly; segments crowded, linear, acute. Corymbs repeatedly compound.

A. tomentosa. Linn. *Sp. Pl.* 1264. Willd. v. 3. 2209. *Comp. ed.* 4. 140. *Engl. Bot.* v. 36. t. 2532. *Hook. Scot.* 248. *Hopkirk, Glott.* 106. *Curt. Mag.* t. 498. *DeCand. Fr.* v. 4. 210.

A. n. 106. *Hall. Hist.* v. 1. 45.

Millefolium luteum. *Ger. Em.* 1073. f. *Lob. Ic.* 748. f.

464 SYNGENESIA—POL.-FRUSTRAN. *Centaurea*.

M. tomentosum luteum. *Bauh. Pin.* 140. *Bauh. Hist.* v. 3. p. 1. 138. f.

Helichrysum alterum. *Matth. Valgr.* v. 2. 392. f.

H. italicum. *Camer. Epit.* 788. f. *Dalech. Hist.* 776. f.

Stratiotes lutea. *Clus. Hisp.* 371. f. *Dalech. Hist.* 771. f.

S. millefolia, flavo flore. *Clus. Hist.* v. 1. 330.

In dry hilly pastures in Scotland and Ireland.

On Spittle hill to the north-west of Balvie, where it was found "by the gardener at Balvie," and on hills in the neighbourhood of Paisley, near Glasgow. *Hopkirk.* Sent to Mr. Sowerby from Ireland. *Engl. Bot.*

Perennial. *July, August.*

Root woody, slightly creeping, with many long fibres. *Stems* scarcely a foot high, curved at the base, then erect, round, leafy, simple, woolly. *Leaves* doubly pinnatifid, woolly on both sides, especially when young; their segments linear-lanceolate, acute, simple or notched, crowded. *Cal.* woolly, its scales obovate, edged with brown. *Fl.* densely corymbose, on woolly stalks; the radius, as well as disk, of a golden yellow. The whole herb, as well as the flowers, has an aromatic scent when rubbed. It serves to decorate rock-work in gardens, but will not bear wet or shade.



SYNGENESIA. POL.-FRUSTRANEA.

410. CENTAUREA. Knapweed, Blue-bottle, and Star-thistle.

Linn. Gen. 442. *Juss.* 174. *Fl. Br.* 909. *DeCand. Fr.* v. 4. 88. *Lam. t.* 703.

Jacea. *Juss.* 173. *Tourn. t.* 254.

Cyanus. *Juss.* 174. *Tourn. t.* 254. *Gærtn. t.* 161.

Seridia. *Juss.* 173.

Calcitrapa. *Juss.* 173. *Gærtn. t.* 163.

Nat. Ord. Compositæ, α, capitatae. *Linn.* 49. *Cinarocephalæ, sect. 1, 2, veræ.* *Juss.* 55.

Common Cal. roundish, imbricated, with closely converging scales, terminating variously. *Cor.* compound; *florets* all tubular, of 2 kinds; those of the disk perfect, regular, with 5 equal spreading segments in their oblong tumid limb, and a slender tube; those of the radius fewer,

with the rudiments of a pistil only, abortive, lax, spreading, often wanting, their slender tube gradually dilated upwards, into an unequally funnel-shaped, very large limb, with 5 or more sharp segments. *Filam.* in the florets of the disk only, capillary, very short. *Anth.* in a cylindrical tube, about the length of the corolla. *Germ.* in the florets of the disk, small, oblong. *Style* thread-shaped, about equal to the stamens. *Stigma* with a prominent, often cloven, point. The radiant florets have only the rudiments of a *germen*, with scarcely any *style* or *stigma*. *Seed-vessel* none, except the permanent closed calyx. *Seed* in the florets of the disk only, various in shape, mostly very smooth. *Down* generally short, bristly, or feathery, in some wanting. *Recept.* bristly.

A large herbaceous genus, which Jussieu, after Tournefort, has divided into several, by the structure, or termination, of the *calyx-scales*. Linnæus has kept it entire, and as DeCandolle has not disturbed it, I shall make no such attempt. *Centaurea* is most naturally allied to *Carduus*, *Cirsium* and *Serratula*, to one or other of which some of its species might be referred, as differing only in the presence of abortive, tubular, dilated, radiant *florets*. But those with either simple or fringed *calyx-scales*, whether furnished with an abortive radius or not, must be kept separate. The presence of such a radius is, in this case, an approach towards a double flower. The *leaves*, are either undivided, toothed, pinnatifid, or pinnate; not spinous in any genuine species. *Fl.* erect, terminal, or lateral, solitary, or corymbose; red, blue, yellow, or whitish. *Cal.* either unarmed, naked, beautifully fringed, feathery, or unequally spinous.

* *Calyx-scales* jagged, or fringed.

1. *C. Jacea*. Brown Radiant Knapweed.

Calyx-scales membranous, torn; lower ones pinnatifid. Leaves linear-lanceolate; radical ones elliptic-lanceolate, toothed. Flowers radiant. Seed-down very short, in a simple row.

C. Jacea. *Linn. Sp. Pl.* 1293. *Fl. Suec.* 300. *Willd. v. 3.* 2309. *Comp. ed.* 4. 140. *Engl. Bot. v. 24. t.* 1678. *Hook. Scot.* 248. *DeCand. Fr. v. 4.* 91. *Bull. Fr. t.* 227. *Fl. Dan. t.* 519.

Rhaponticum n. 195. *Hall. Hist. v. 1.* 84.

Jacea. *Tillands. Ic.* 111. f.

In meadows and groves, where the soil is tenacious and moist.

Sent from Ireland in 1796, by *Mr. Templeton*. In Sussex. *Mr. Borrer*.

Perennial. *August, September.*

Root rather woody, with many long fibres. *Stem* erect, a foot high, branched, angular, furrowed, roughish, leafy, solid. *Leaves* light green, rough with short hairs; radical ones largest, stalked, toothed or pinnatifid; the rest scattered, sessile, oblong, or linear-lanceolate, entire, or toothed near the base. *Fl.* solitary at the tumid, deeply furrowed, end of each branch, accompanied by a few leaves close to the *calyx*, which is brown, not black; the inner scales terminating in a light-brown, orbicular, variously jagged lobe; outer more distinctly fringed, or pectinate, often with rough teeth. *Radiant florets* numerous, large, light crimson, spreading; those of the *disk* much shorter, rather darker. *Seeds* to the latter only, inversely conical, crowned with a simple row of very short black bristles.

Linnaeus says, the herb steeped in water, with alum, before the flowers expand, dyes silk of a fine yellow.

The German plant described by Dillenius, in Ray's *Synopsis* 199, is evidently *C. Jacea*, which he well distinguishes from the *nigra*.

2. *C. nigra*. Black Knapweed.

Calyx-scales oval, fringed with upright capillary teeth. Lower leaves somewhat lyrate, with angular lobes; upper ones ovate. Flowers discoid. Seed-down very short, tufted.

C. nigra. *Linn. Sp. Pl.* 1288. *Willd. v. 3.* 2287. *Fl. Br.* 910. *Engl. Bot. v. 4. t.* 278. *Mart. Rust. t.* 130. *Hook. Scot.* 248. *Fl. Dan. t.* 996.

Cyanus niger. *Gærtn. v. 2.* 382. *t.* 161.

Jacea n. 184. *Hall. Hist. v. 1.* 80.

J. nigra. *Raii Syn.* 198. *Ger. Em.* 727. *f.* *Dod. Pempt.* 124. *f.*

J. nigra vulgaris. *Lob. Ic.* 541. *f.*

J. cum squamis ciliis instar pilosis. *Bauh. Hist. v. 3. p.* 1. 28. *f.*

J. austriaca tertia. *Clus. Pan.* 543. *f.* 545.

J. austriaca sexta. *Clus. Hist. v. 2.* 7. *f.*

Common and Jagged Knapweed. *Petiv. H. Brit. t.* 22. *f.* 8. 9.

β , with radiant flowers. *Raii Syn.* 199.

Cyanus n. 185. *Hall. Hist. v. 1.* 80.

γ . *Jacea nigra minor tomentosa laciniata*. *Dill. in Raii Syn.* 199.

In pastures, and by road sides, very common.

β . Common in the west of England. *Ray*. Near Oxford. *Dill*. Frequent in pastures and waste ground between Bristol and the Severn.

γ . Four miles on this side Malton, in the road to York, on a stony bank by a rivulet. *Dr. Richardson*.

Perennial. *June—August.*

Habit like the last, but the *stem* is taller, more bushy, more deeply furrowed, and rather less rough. *Lower leaves* somewhat lyrate, partly stalked, finely toothed; *upper* sessile, either partly toothed near the base, or quite entire; sometimes clasping the stem with their heart-shaped base; sometimes only ovate in that

part ; their colour is always darker than that of *C. Jacea*. *Fl.* of a deeper crimson, commonly without any radiant or abortive *florets*, and the latter when present are smaller than in *C. Jacea*. *Cal.* essentially different, much blacker, though pale and downy at the base ; each scale terminating in a heart-shaped, or ovate, black appendage, regularly fringed with parallel, mostly paler, teeth, the inner ones only being irregularly torn. *Seeds* obovate, each crowned with a dense tuft of pale, rough, scaly bristles. The *flowers* are occasionally white. Ray describes a double variety, shown him by Thomas Willisel, in which the proper *florets* of the disk were all changed to handsome radiant ones.

3. *C. Cyanus*. Corn Blue-bottle.

Calyx-scales serrated. Leaves linear-lanceolate, entire ; lower ones toothed towards their base.

C. Cyanus. *Linn. Sp. Pl.* 1289. *Willd. v. 3.* 2291. *Fl. Br.* 911. *Engl. Bot. v. 4. t.* 277. *Curt. Lond. fasc. 6. t.* 62. *Mart. Rust. t.* 111. *Hook. Scot.* 249. *Fl. Dan. t.* 993. *Bull. Fr. t.* 221.

Cyanus. *Raii Syn.* 198. *Bauh. Hist. v. 3. p. 1.* 21. *f. Fuchs. Hist.* 428. *f.*

C. n. 191. *Hall. Hist. v. 1.* 82.

C. vulgaris. *Ger. Em.* 732. *f. Lob. Ic.* 546. *f.*

C. minor. *Matth. Valgr. v. 1.* 463. *f. Camer. Epit.* 289. *f.*

C. sylvestris. *Fuchs. Ic.* 241. *f.*

C. segetum vulgaris minor annuus. *Moris. v. 3.* 134. *sect. 7. t.* 25. *f. 4.*

Baptisecula. *Trag. Hist.* 566. *f.*

Papaver Heracleum. *Column. Phytob.* 93. *t. 92. ed. 2.* 74. *t. 21.*

Blue Bottles. *Petiv. H. Brit. t.* 22. *f. 4.*

In corn fields, a common weed.

Annual. *July, August.*

Root tapering, with many rigid fibres. *Herb* loosely cottony, of a greyish hue. *Stem* 2 or 3 feet high, copiously branched, leafy, angular. *Leaves* linear-lanceolate, pointed, entire ; the lower ones broader, mostly toothed or pinnatifid, but the radical ones are entire. *Fl.* numerous, solitary, on naked stalks. *Cal.* ovate ; its scales smooth, serrated, with sharp, white, or partly brown, teeth. *Radiant florets* large and spreading, generally with more than 5 segments, of a bright sky-blue ; those of the *disk* purplish, with dark *anthers*. *Seeds* obovate, rather compressed, a little downy, abrupt, each crowned with a dense conical tuft, of very unequal, tawny, rough bristles.

White and dark-purple varieties, sometimes with a multiplied *radius*, are commonly raised, amongst other hardy annuals, in flower-gardens. They have no scent. The wild flowers afford a blue for painting in water-colours, the expressed juice requiring only to be mixed with cold alum water. The separate *floret* in *Engl. Bot.* coloured with this, by way of experiment, has now stood well for 30 years.

4. *C. Scabiosa*. Greater Knapweed.

Calyx-scales ovate, fringed, somewhat downy. Leaves pinnatifid; segments lanceolate, roughish, partly toothed.

C. Scabiosa. Linn. *Sp. Pl.* 1291. Willd. v. 3. 2296. *Fl. Br.* 911. *Engl. Bot.* v. 1. t. 56. Hook. *Scot.* 249.

Cyanus n. 186. Hall. *Hist.* v. 1. 81.

Jacea major. Raii *Syn.* 198. Ger. *Em.* 727. f.

J. nigra laciniata. Moris. v. 3. 140. sect 7. t. 28. f. 10.

Scabiosa major. Matth. *Valgr.* v. 2. 318. f. Camer. *Epit.* 710. f. Dalech. *Hist.* 1066. f.

Matfellow. Petiv. *H. Brit.* t. 22. f. 7.

In the borders and ridges of corn fields, and by way sides, common.

Perennial. July, August.

Root rather woody. Stem about 2 feet high, erect, branched, angular, furrowed, leafy, smooth to the touch. Leaves dark green, slightly hairy on both sides, rough-edged, deeply and very variously pinnatifid, the segments acute, unequal, sometimes ovate, sometimes lanceolate, and in the latter case more toothed or sharply serrated. Fl. terminal, stalked, solitary, large and handsome, crimson, rarely white; their radiant *florets* large, each with 5 deep, long and narrow segments. Calyx-scales green and somewhat downy in their lower half, black and triangular above, fringed with fine parallel teeth, or bristles pale at the ends. Seeds crowned with many reddish bristles. The calyx becomes reflexed after the seeds are blown away, and is rendered conspicuous by the shining silvery hue of its inside.

A variety was gathered on dry banks, near the sea coast of Angus-shire by the late Mr. G. Don, which he thought distinct, and took for *C. intybacea* of Lamarck and DeCandolle. It has deeply and narrowly divided foliage, the radical leaves being interruptedly pinnate, but has no specific mark. Another variety as I presume, on the authority of Dr. Hooker, gathered in Scotland by Mr. David Don, has the leaves less deeply divided; the radical ones very large. This was taken by its discoverer for *C. coriacea*, Willd. *Sp. Pl.* v. 3. 2296, which it may probably be, as Willdenow says the latter is but too near akin to *C. Scabiosa*. Several exotic species of *Centaurea* may be observed to vary extremely in the breadth and subdivision of their leaves.

** *Calyx-scales palmate and spinous.*

5. *C. Isnardi*. Jersey Star-thistle.

Calyx-scales with palmate spines. Leaves toothed, somewhat lyrate, roughish, slightly clasping the stem. Flowers terminal, solitary; leafy at the base.

C. Isnardi. Linn. *Sp. Pl.* 1295. Willd. v. 3. 2312. *Fl. Br.* 912. *Engl. Bot.* v. 32. t. 2256. Dicks. *H. Sicc. fasc.* 16. 10. Hull ed. 2. v. 1. 247.

Calcitrapoides procumbens, *Cichorii folio*, flore purpurascente.
Danti d'Isnard Mém. de l'Ac. des Sc. 378. t. 19.

In meadows or pastures in the isle of Jersey. *Dickson*.

Perennial. *July, August*.

Root branching, with numerous fibres; simple at the crown.

Stems several, recumbent, branched, leafy, angular, furrowed, roughish, scarcely a span long. *Leaves* scattered, sessile, clasping the stem more or less, oblong, variously toothed or pinnatifid in a lyrate manner, minutely rough on both sides, but especially at the edges, not downy nor hoary; their lobes tipped with small spines; lower ones largest, and somewhat stalked; uppermost crowded under each flower, tapering at the base, and not clasping. *Fl.* light purple; the radiant *florets* much smaller in proportion than the foregoing; disk convex. *Anth.* dark purple. *Cal.* globose; scales ovate, smooth, green, each tipped with 5 yellow spreading thorns, united in a palmate manner, shorter than the scale. Mr. J. D. Sowerby, in drawing the flower, observed a degree of irritability in the *filaments*, which contracted when the *anthers* were touched. The same has been noticed by several persons in *C. Calcitrapa*. The *seeds* are obovate, abrupt, each crowned with a tuft of bristles.

*** *Calyx-scales with double, or compound, spines.*

6. *C. Calcitrapa*. Common Star-thistle.

Flowers lateral, sessile. Calyx-scales doubly spinous. Leaves pinnatifid, toothed. Stem hairy, widely spreading.

C. Calcitrapa. *Linn. Sp. Pl.* 1297. *Willd. v. 3.* 2317. *Fl. Br.* 912. *Engl. Bot. v. 2. t.* 125.

Calcitrapa n. 194. *Hall. Hist. v. 1.* 84.

Carduus stellatus. *Raii Syn.* 196. *Ger. Em.* 1166. f. *Dod. Pempt.* 733. f. *Lob. Ic. v. 2.* 11. f.

C. stellatus, sive *Calcitrapa*. *Bauh. Hist. v. 3. p. 1.* 89. f.

C. muricatus, vulgo *Calcitrapa dictus*. *Clus. Hist. v. 2.* 7. f.

Hippophæstum. *Column. Phytob.* 105. t. 107.

Polyacantha. *Cord. Hist.* 91. 2. f.

Myacanthos. *Dalech. Hist.* 1474. f.

Star-thistle. *Petiv. H. Brit. t. 21. f.* 11.

In waste gravelly ground, or in sandy plains near the sea, chiefly in the more temperate parts of England.

Annual. *July, August*.

Root tapering, whitish. *Stem* low and widely spreading, very much and repeatedly branched, leafy, furrowed, solid, hairy, or rather downy. *Leaves* scattered, sessile, hairy, unequally pinnatifid, various in breadth, beset with prickly teeth; upper ones less divided, crowded under the flowers; lowermost stalked. *Fl.* rose-coloured, lateral, solitary, nearly or quite sessile, encompassed with a few leaves. *Cal.* ovate, each scale terminating in a large, sharp, channelled, spreading spine, fringed at its

base with smaller prickles. *Radiant florets* small, nearly regular. *Disk* convex, with pale red *anthers* and *stigmas*. *Seeds* obovate, polished, particoloured, with scarcely any crown. The irritability of the *filaments* has been described by several authors. When handled the herbage leaves a glutinous matter on the fingers, which is very bitter.

7. *C. solstitialis*. Yellow Star-thistle. St. Barnaby's thistle.

Flowers terminal, solitary. Calyx-scales doubly spinous. Stem winged, from the decurrent, lanceolate, unarmed leaves; radical leaves lyrate.

C. solstitialis. *Linn. Sp. Pl.* 1297. *Willd. v. 3.* 2309. *Fl. Br.* 913. *Engl. Bot. v. 4. t.* 243. *Tr. of Linn. Soc. v. 2.* 236.

Calcitrapa n. 193. *Hall. Hist. v. 1.* 83.

Jacea lutea annua stellata et alata, foliis Cyani. *Moris. v. 3.* 145. *sect. 7. t. 34. f.* 27.

Carduus stellatus luteus, foliis Cyani. *Raii Syn.* 196. *Bauh. Pin.* 387.

C. stellatus mitior apulus, Spina solstitialis altera. *Column. Ecphr. v. 1. 30. t.* 31.

C. solstitialis. *Ger. Em.* 1166. *f.*

Spina solstitialis. *Dod. Pempt.* 734. *f.* *Lob. Ic. v. 2. 12. f.* *Bauh. Hist. v. 3. p. 1. 90. f.* 91.

Leucacantha quorundam. *Dalech. Hist.* 1464. *f.*

Yellow Thistle. *Petiv. H. Brit. t. 21. f.* 12.

In cultivated fields, and about hedges, rare.

By hedges not far from Cirencester, Gloucestershire. *Bobart*. Near Northfleet, Kent. *Hudson*. At Arminghall, near Norwich. *Mr. Crowe*. In a grassy field near Dartford, Kent. *Mr. Charles Sinclair Cullen*. Near St Edmund's hill, Bury. *Rev. Dr. Webb*.

Annual. *July—September*.

Root tapering, whitish. *Herb* of a hoary green, slightly clothed with cottony down, a little glutinous, intensely bitter. *Stem* $1\frac{1}{2}$ or 2 feet high, branched, moderately spreading, leafy, uninterruptedly winged, from the decurrent bases of the lanceolate, acute, entire, wavy *leaves* of the branches. *Radical leaves* 4 or 5 inches long, lyrate; their lobes alternate, acute, toothed or jagged; terminal one large. *Fl.* solitary at the end of each branch, bright yellow. *Calyx-scales* downy, each of the middle ones terminating in a large, spreading, needle-shaped, yellowish thorn, accompanied at the base by 4 or more small, slender, spreading bristles; several of the lower scales bearing only such bristles, with a rudiment of the central thorn. *Radiant florets* not much larger than those of the disk. *Seeds* obovate, smooth. *Down* unequal, rough, shorter than the hairs of the *receptacle*, which are extremely slender.

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